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3WT Air Circuit Breakers up to 4000 A

Catalog LV 35 · 2011

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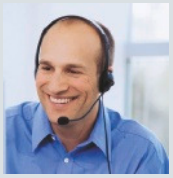

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PEFC/04-31-1404

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Introduction

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The right one for everyone

Our portfolio includes switchboards, busbar trunking systems, distribution boards, protection, switching, measuring and monitoring devices, building management systems, switches and socket outlets. All over the world, the universality, modularity and intelligence of our components and systems give you innumerable benefits – all the time they are in use. Developed according to the respective international standards, we offer forward-looking design with innovative functions and ensure the highest quality standards world-wide.

Sustainability in focus

As a worldwide leader in the provision of high-quality, standards-compliant products and systems for low-voltage power distribution, we contribute to the sustainable and responsible handling of electrical energy. With our integrated portfolio of energy saving and distribution through short circuit protection and overload protection through to energy management, we support the implementation of environmentally friendly energy concepts on the basis of wind power, photovoltaics, intelligent buildings and electromobility.

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Universal, safe and intelligent power distribution

Whether in industrial plants, in infrastructure or in buildings: Each technical plant depends on the reliable supply of electricity. Even a short outage can have grave consequences. We offer the best technology for the responsible use of electrical energy and at the same time help to protect people and property and to conserve natural resources.

We are happy to help you with comprehensive support from the initial information through to operation. Take a closer look at all the options available from Siemens.

Everything for power distribution

Consistent solutions are required for electric power distribution in buildings. Our answer is Totally Integrated Power (TIP). TIP stands for innovative products, systems and software tools which ensure the safe and reliable distribution of electric power. They are supplemented by communication-capable circuit breakers and modules which connect the power distribution system to the building automation system or industrial automation solutions. These in turn can be linked to a comprehensive energy management system which contributes to optimizing the consumption of electricity and hence to lowering the costs of operation.

Excellent support

As a competent and reliable partner, we also offer you comprehensive support – from the initial information, through planning, configuring and ordering to commissioning, operation and technical support. We know the needs of your working environment and your daily business. Based on this, we give you flexible and high quality support, which allows you to concentrate fully on your customers and their needs.

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3WT Air Circuit Breakers. The smart choice.

Flexibility

- Electronic trip units (ETU) with outstanding features.
- Only two frame sizes cover a broad range of applications from 400 A to 4000 A, with a breaking capacity up to 66 kA at 500 V, 3- or 4-pole version, fixed-mounted, withdrawable version.
- All components can be combined in a modular way.

Ease of use

- User friendliness in planning, configuration, installation and operation.
- Wide range of accessories for both frame sizes can be easily retrofitted.
- Displays for all electronic trip units (ETU).

Safety and reliability

- International and standardized processes ensure highest product quality.
- Conforms to international standards and approvals.

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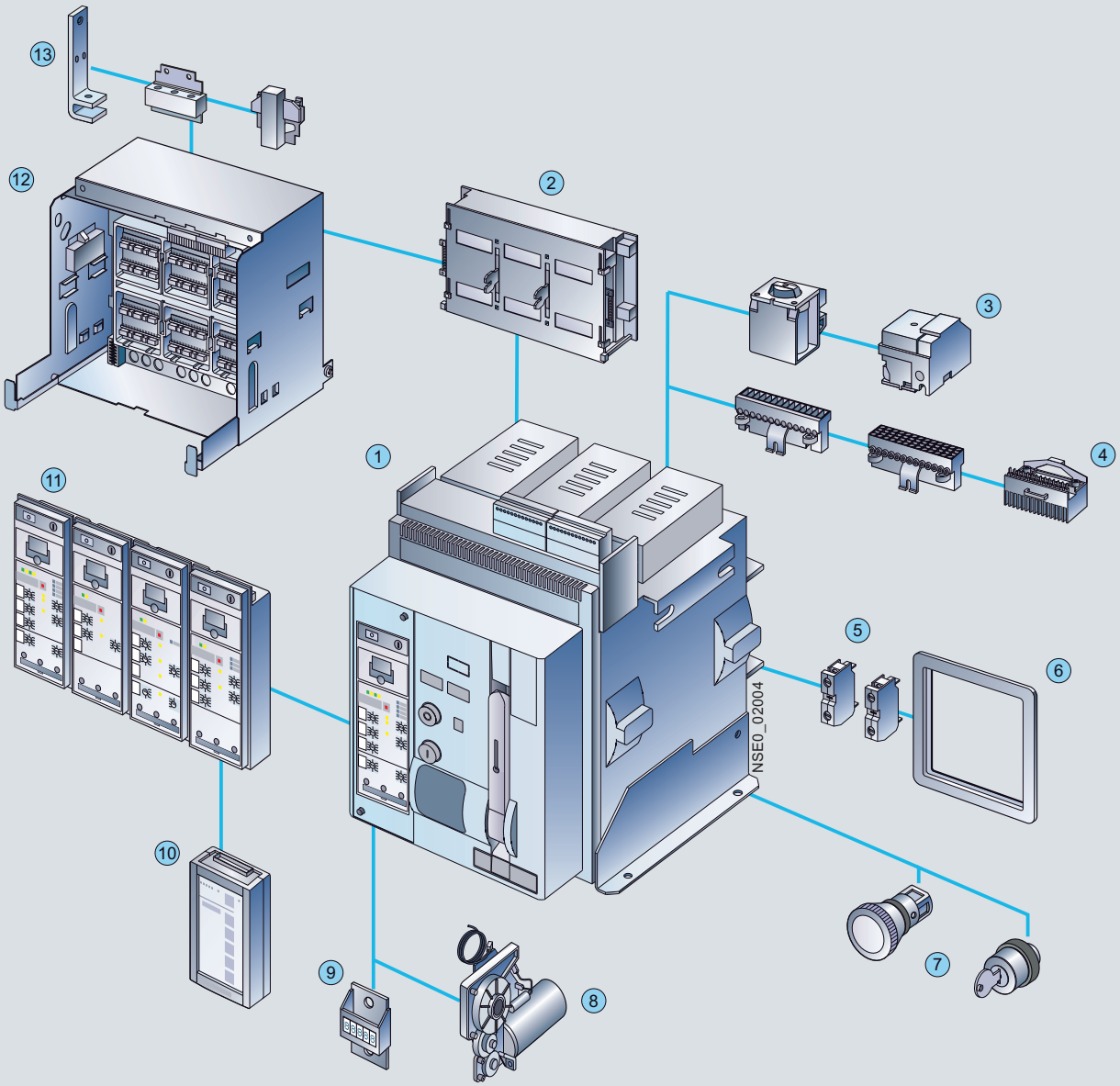

1 Circuit breaker
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4 Auxiliary conductor plug-in system
5 Auxiliary switch block
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7 EMERGENCY-STOP pushbutton, key operated
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Also available are FAQs, software downloads, certificates and technical data sheets as well as our training programs. In the image database you will find, depending on the product, 2D/3D graphics, dimension drawings and exploded drawings, characteristic curves or circuit diagrams which you can download.

Convinced? We look forward to your visit!

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3WT Air Circuit Breakers up to 4000 A (AC)

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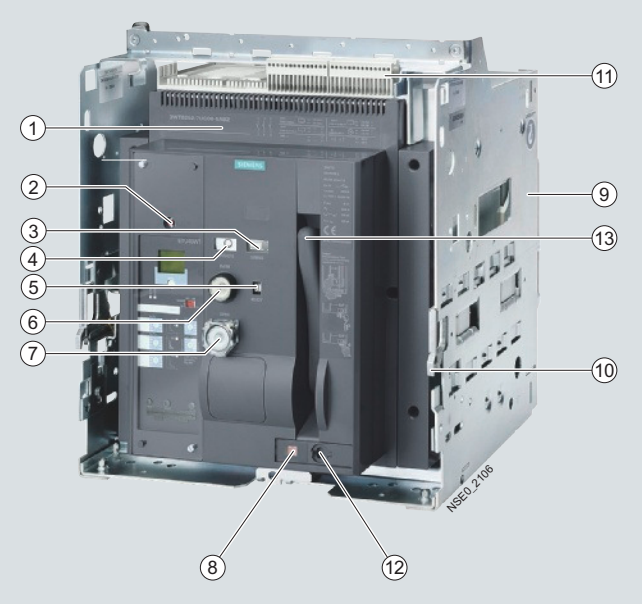
General data

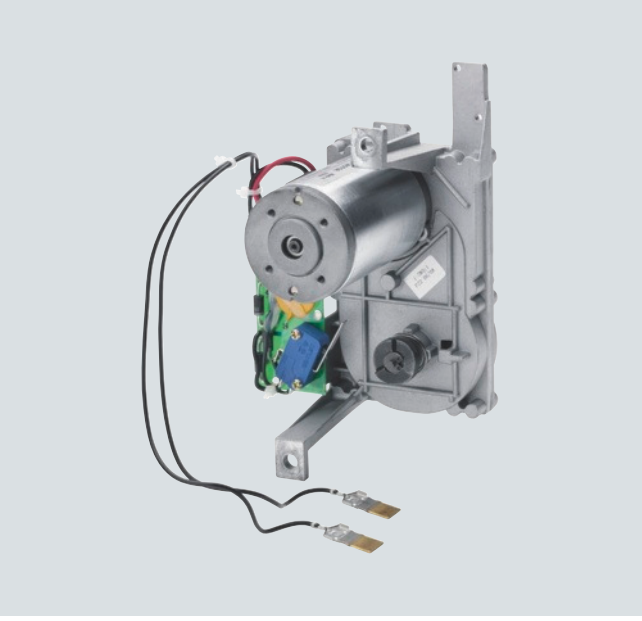
Overview



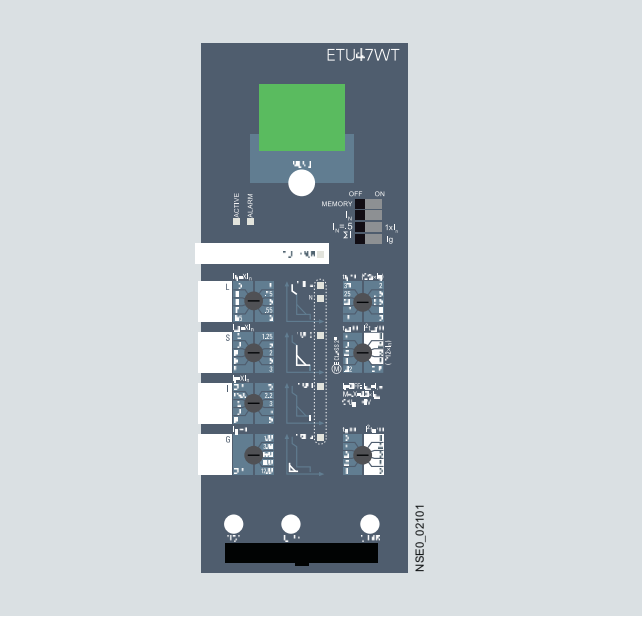
3WT circuit breaker, withdrawable version, size II, 3-pole

3WT circuit breaker, fixed-mounted version, size II, 3-pole

① Withdrawable circuit breaker
② Indication and reset button after tripping for
– tripped signaling switch and
– manual reset reclosing lockout
③ Stored-energy indicator
④ Switching position indicator
⑤ Ready-to-close indicator
⑥ ON button, mechanical
⑦ OFF button, mechanical
⑧ Indication of circuit breaker position
⑨ Guide frame
⑩ Guide rails
⑪ Auxiliary circuit plug-in system
⑫ Crank hole
⑬ Hand lever



Motorized operating mechanism



Electronic trip unit

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Benefits

Safety and reliability

- High degree of protection with door sealing frame in the case of exclusively local operation of the circuit breaker
- Infeed supply from above or below, as required
- Locking of the withdrawable circuit breaker against moving, as standard
- Locking of the guide frame with the circuit breaker removed, as standard
- Signaling switch for overload and short-circuit tripping with mechanical reclosing lockout
- High degree of protection with cover IP55
- Mechanical reclosing lockout after overload or short-circuit tripping as standard
- The circuit breaker is always equipped with the required number of auxiliary supply connectors

Easy to operate

- Unambiguous ON-OFF indicator with auxiliary switch for signal
- Ready-to-close indicator with signaling switch as safety standard.

Modular

Many components, such as auxiliary releases, motorized operating mechanisms, electronic trip units and current transformers can be replaced or retrofitted to adapt the circuit breaker to changing requirements.

Minimal power loss and therefore low energy consumption

The low power consumption of the electrical components also saves money when it comes to purchasing the control-power transformers. Where space is at a premium or ventilation is limited.

Application

Specifications

IEC 60947-2,
GB 14048.2,
CCC Approval,
climate-proof to IEC 60068-2-30,
Approval according to maritime classification
on request.

Operating conditions

The 3WT circuit breakers are climate-proof in accordance with IEC 60068-2-30.

They are intended for use in enclosed areas where no severe operating conditions (e.g. dust, corrosive vapors, damaging gases) are present.

When installed in dusty or damp areas, suitable enclosures must be provided. If damaging gases (e.g. hydrogen sulfide) are present in the surrounding air, sufficient incoming fresh air must be supplied.

The permissible ambient temperatures and the associated rated currents are listed in the technical specifications.

Design

Versions

Breaking capacity: 55/66 kA at 500 V
Rated current: from 400 A to 4000 A
Rated operating voltage: up to AC 500 V

The 3WT circuit breakers are supplied complete with an operating mechanism, electronic trip unit and auxiliary switches and are fitted with auxiliary releases.

The non-automatic circuit breakers are supplied without electronic trip unit

Standard version

- Electronic trip unit with LSI protection, LCD display with backlight, LEDs for the cause of tripping, LED status indicator, query and test button
- Auxiliary supply connector: The circuit breaker is equipped with the required number of connectors
- Mechanical ON and OFF pushbutton
- Door sealing frame IP40
- Tripped signaling switch (1 NO)
- Ready-to-close indicator with signaling switch
- Stored-energy indicator
- Auxiliary switches (2 NO + 2 NC)
- Rear horizontal main circuit connections for fixed mounted and withdrawable versions
- For 4-pole circuit breakers, the fourth pole (N) is installed on the left and is 100 % loadable
- Indication and reset button after tripping for
  - tripped signaling switch and
  - mechanical reclosing lockout
- User manual in English/Chinese/Spanish/Russian/Portuguese/German/Turkish

Additional features of the withdrawable version:

- Main contacts:
  Laminated receptacles in the guide frame, penetration blades on the withdrawable circuit breaker
- Position indicator in the control panel of the withdrawable circuit breaker
- Guide frame with guide rails for easy moving of the withdrawable circuit breaker
- The withdrawable circuit breaker can be locked to prevent it being pushed out of position

Standard version for non-automatic circuit breaker

- Same features as the circuit breaker, see "Standard version" but
- No electronic trip unit

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General data

Function

Operating mechanisms (see illustration "Motorized operating mechanism")

The circuit breakers are available with various optional operating mechanisms:

- Manual operating mechanism with memory, with mechanical closing
- Manual operating mechanism with mechanical and electrical closing
- Motorized operating mechanism that can also be operated manually, with mechanical and electrical closing.

The operating mechanisms with electrical closing can be used for synchronization tasks.

EMERGENCY-STOP facility

The 3WT circuit breakers can be used as an EMERGENCY-STOP facility to IEC 60204-1 if the circuit breaker is equipped with an undervoltage release and is used in conjunction with an EMERGENCY-STOP control device.

Auxiliary and signaling switches

- Ready-to-close
  If all the conditions are fulfilled, so that the circuit breaker is ready to close, this is indicated visually on the operator panel as well as by means of an indicator switch (S7).
- Contact position-independent auxiliary switches
  The circuit breakers are supplied with 2 NO and 2 NC contacts or with 2 NO and 2 NC and 2 CO contacts according to order.
- "Tripped" signaling switch and mechanical reclosing lockout
  As standard, the circuit breaker is equipped with an S11 signaling switch and a mechanical reclosing lockout for the common overload and short-circuit signal and, depending on the setting and version of the electronic trip unit, the ground-fault signal.
  The tripped signal and the standard mechanical mechanism to prevent closing remain active until the reset button is operated on the circuit breaker. When the circuit breaker has tripped, this is indicated by the protruding reset button.
  The electrical signal from the „tripped“ switch S11 has to be reset by operating the Reset button.

Auxiliary supply connections

The type of connection for the auxiliary switches depends on the type of installation:

- Withdrawable version:
  The internal auxiliary switches are connected to the male connector on the circuit breaker side. When fully inserted, the connector makes a connection with the sliding module in the guide frame.
- Fixed mounting:
  In this case the auxiliary supply connectors are engaged directly onto the circuit breaker.

Fixed-mounted and withdrawable version

Fixed-mounted and withdrawable circuit breakers

- Protective measures against arcing gases
  For 3WT circuit breakers with voltages up to AC 500 V, screening from vertical busbars is not necessary.
  Electrical add-on devices on the side of the circuit breaker must be separately covered. Also see notes under "Project planning aids", "Dimensional drawings".
- Operator panel
  The operator panel is designed to protrude from a cutout in the door providing access to all operator controls and displays with the door closed.
  The operator panels for all circuit breakers (fixed-mounted/withdrawable versions, 3-pole, 4-pole) are identical. The operator panel ensures degree of protection IP41.
- Door sealing frame
  The door sealing frame seals the cabinet door with the operator panel. With the cabinet door closed, the IP degree of protection is achieved for the circuit breaker.

Withdrawable circuit breaker

The withdrawable version comprises a withdrawable circuit breaker, a guide frame and a hand crank for moving the withdrawable circuit breaker. The guide frames are fitted with guide rails as standard for easy handling of the withdrawable circuit breaker.

- Auxiliary supply connections
  The auxiliary supply connections make contact automatically when the circuit breaker slides into the guide frame (test position, connected position).
- Circuit breaker positions in the guide frame
  The withdrawable version has three switch positions in the switchgear cabinet behind the cabinet door:
  - Connected position
    (main circuit and auxiliary circuit ready)
  - Test position
    (main circuit disconnected, auxiliary circuit ready)
  - Disconnected position
    (main circuit and auxiliary circuit disconnected)

In the disconnected position, the withdrawable circuit breaker complies with the "protective separation condition" with a visible isolating distance in the main circuit and auxiliary circuit.
The circuit breaker must always be switched off before it is moved. The "OFF" button must be held down when the slide in the crank hole is opened.

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Guide frames

Closing of the crank hole is only possible in the circuit breaker positions (connected, test or disconnected position). The circuit breaker position is shown on a display on the circuit breaker.

The circuit breaker is moved with the help of a hand crank. The connected position as well as the disconnected position is achieved by moving the circuit breaker to the end stop.

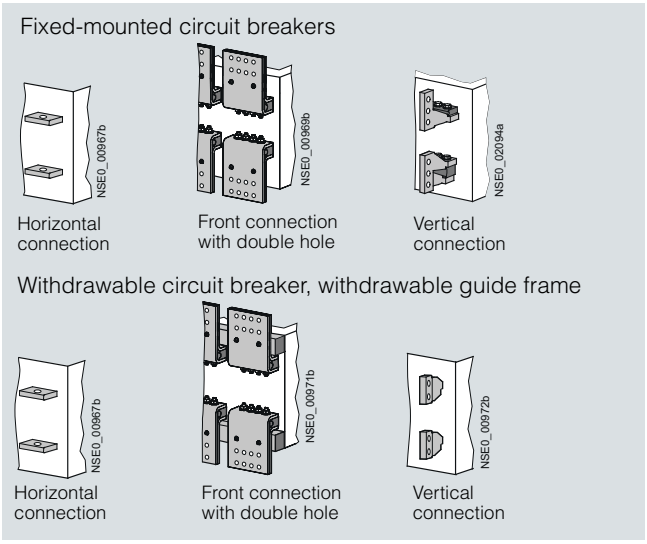
- Shutters
  Inadvertent touching of live main contacts or busbars is prevented by covering with a shutter. The shutter is constructed in two parts and allows the upper or lower connection areas to be opened separately for the purpose of checking that they are not live. The divided shutter can be interlocked in the open or closed position and two padlocks can be fitted.

Main circuit connections

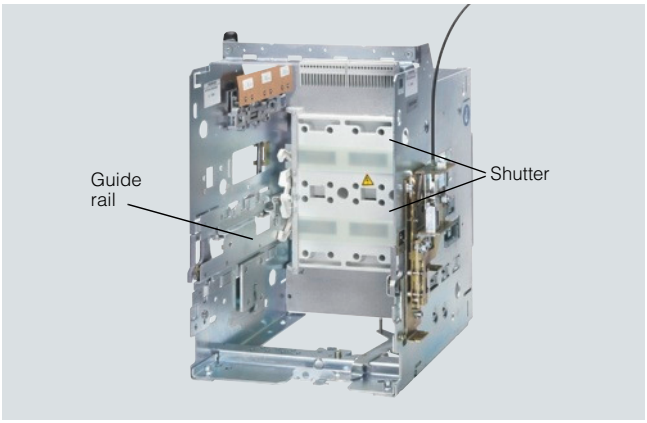
All circuit breakers are equipped with horizontal main circuit connections on the rear for up to 3200 A as standard (horizontal connection to busbars). Exception: Circuit breakers of size II with max. rated current 4000 A. They are equipped with vertical main connections (for upright busbars).

The following options are available, with combinations of top and bottom connections possible:

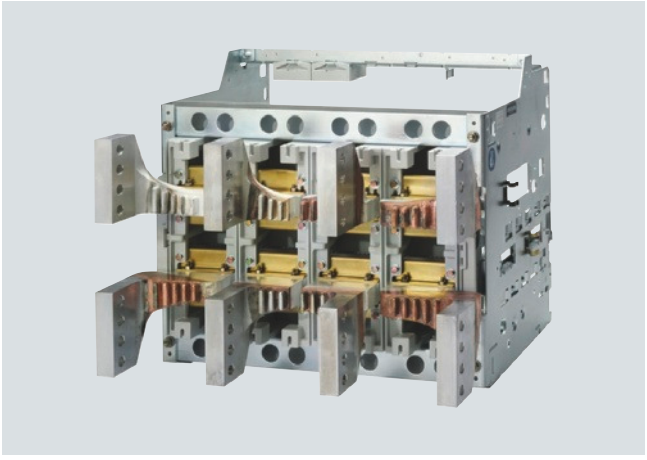
- Accessible from the front, double hole (holes according to DIN 43673) (for vertically installed busbars)
- At the rear, vertical (for vertically installed busbars)



Main circuit connections



Guide frame



Vertical busbars, up to 3800 A

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General data

Opening, closing and locking devices

- ON and OFF buttons
  - Mechanical ON button
    In the standard version, the mechanical ON button is a pushbutton. As an alternative to a pushbutton, a safety lock (CES) can also be supplied.
    If the key is removed in the "0" position, it is no longer possible to close the circuit breaker mechanically.
  - Mechanical OFF button
    In the standard version, the mechanical OFF button is a pushbutton.
- Locking device against moving the withdrawable circuit breaker
  Access to the crank hole and application of the crank is prevented by means of one or more padlocks. This also prevents movement of the withdrawable circuit breaker in the guide frame.

Auxiliary releases

Up to two auxiliary releases can be installed at the same time. The following are available:

1 shunt release or
1 undervoltage release or
2 shunt releases or
1 shunt release +
1 undervoltage releases.

Undervoltage releases

The undervoltage release causes the circuit breaker to be opened if the operational voltage falls below a certain value or is not applied. The circuit breaker cannot be closed manually or by means of an electrical ON command if the undervoltage release is not connected to the operational voltage. The undervoltage release has no delay as standard. A delay can be set by the customer in the range between t_d < 80 ms and t_d < 200 ms.

In addition, an undervoltage release with a delay in the range from 0.2 to 3.2 s is available.

Closing solenoid

The closing solenoid is used to close the circuit breaker electrically by means of a local electrical ON command or by a remote unit.

Motorized operating mechanisms

The operating mechanism is used to load the storage spring automatically.

The operating mechanism is activated if the storage spring has been unloaded and the control voltage is available.

It is switched off automatically after loading. This does not affect manual operation of the storage spring.

Indicators, signals and control elements

Operating cycles counter

The motorized operating mechanism can be supplied with a 5-digit operating cycles counter. The display is incremented by "1" as soon as the storage spring is fully loaded.

Electronic trip units - ETU

Electronic trip units – ETU35WT, ETU37WT, ETU45WT, ETU47WT

The electronic trip unit is controlled by a microprocessor and operates independently of an auxiliary voltage. It enables systems to be adapted to the different protection required of distribution systems, motors, transformers and generators.

In all electronic trip units, the following high-grade features are always included as standard:

- Display with back light
- LSI protection as minimum configuration
- Integrated function test
  The test button can be used to test the electronic trip unit using an integrated test function with or without tripping of the circuit breaker (the solid-state trip unit, trip solenoid and breaker mechanism are tested).
- Active LED
  Correct operation of the electronic trip unit is indicated by a flashing of a green LED.
  When the operating current exceeds the response threshold of the overload protection, it is indicated by rapid flashing of the green LED.
- Cause of tripping
  The cause of tripping can be queried locally and displayed (by pressing the "Query" button).
- T. U. Error
  A microprocessor fault or overtemperature inside of the electronic trip unit is signaled by a warning indicator LED.

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Manual function tester for Electronic trip unit ETU

Manual function tester

The manual function tester is used to verify the proper operation of the electronic trip unit, the energy transformers and current transformers as well as the tripping solenoid F5 and the data display.

Ground-fault protection

Description

Ground-fault releases "G" sense fault currents that flow to ground and that can cause fire in the plant. Multiple circuit breakers connected in series can have their delay times adjusted so as to provide time-graded discrimination.
The reason for tripping is indicated by means of an LED when the query button is activated.

Measurement method

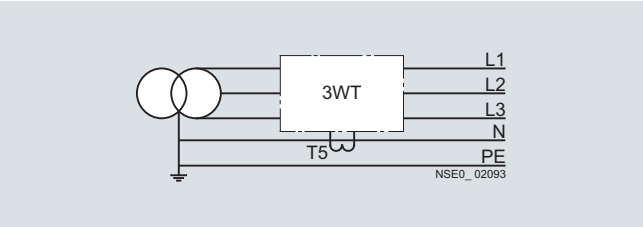
Vectorial summation current formation (measurement method 1)

The three phase currents and the N-conductor current are measured directly.

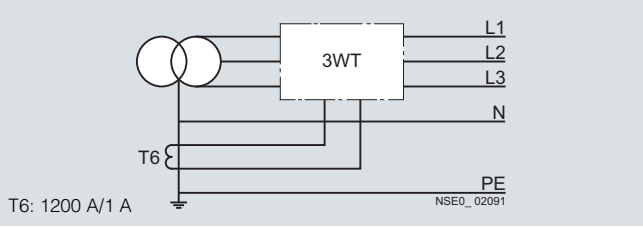
The electronic trip unit determines the ground-fault current by means of vectorial summation current formation for the three phase currents and the N-conductor current.

Direct measurement of the ground-fault current (measurement method 2)

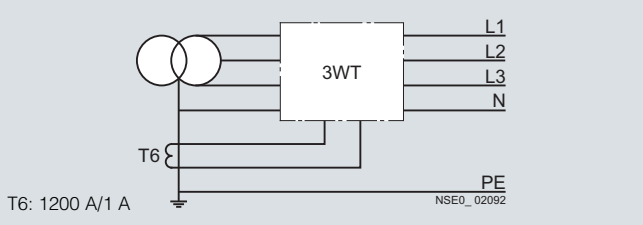
A standard transformer with the following data is used for measurement of the ground-fault current:
1200 A/1 A, Class 1 (the internal load of 3WT is 0.11 Ω). The transformer can be installed directly in the grounded neutral point of a transformer.



3-pole circuit breakers, current transformers in the neutral conductor



3-pole circuit breakers, current transformers in the grounded neutral point of the transformer



4-pole circuit breakers, current transformers in the grounded neutral point of the transformer

Setting

How the ground fault protection is set depends on the measurements method used (see above):

Measurement method 1: in position ΣI.

Measurement method 2: in position Γ_g.

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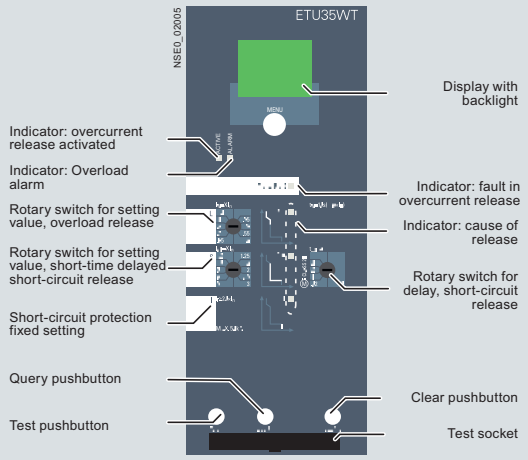
General data

ETU35WT electronic trip unit



Application:

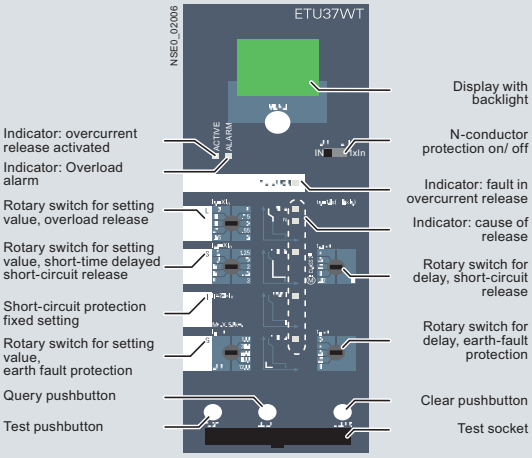
Classical building, motor and system protection with time-selective coordination for up to 4000 A

Features:

- Adjustable overload protection with I^2t characteristic curve Delay time t_R = 10 seconds at 6 × I_R
- Short-time delayed short-circuit protection adjustable in the range 1.25 ... 12 × I_n and
- Instantaneous short-circuit protection preset to 20 × I_n, max. 50 kA
- Overload display
- Indicates the reason for tripping by means of an LED
- Test facility for the release
- Protection functions are set by means of the rotary coding switch
- Display with back light

For technical details see the table "Functional Overview of the Electronic Trip Unit System" under "Technical Specifications".

ETU37WT electronic trip unit


NSE0_02006
ETU37WT
Display with backlight
Indicator: overcurrent release activated
Indicator: Overload alarm
Rotary switch for setting value, overload release
Rotary switch for setting value, short-time delayed short-circuit release
Short-circuit protection fixed setting
Rotary switch for setting value, earth fault protection
Query pushbutton
Test pushbutton
N-conductor protection on/ off
Indicator: fault in overcurrent release
Indicator: cause of release
Rotary switch for delay, short-circuit release
Rotary switch for delay, earth-fault protection
Clear pushbutton
Test socket

Application:

Classical building, motor and system protection with time-selective coordination for up to 4000 A

Features:

The same as ETU35WT but also

- Reversible neutral conductor protection
- Permanently integrated ground-fault protection. Calculation of the ground-fault current through vectorial summation current formation

For technical details see the table "Functional Overview of the Electronic Trip Unit System" under "Technical Specifications".

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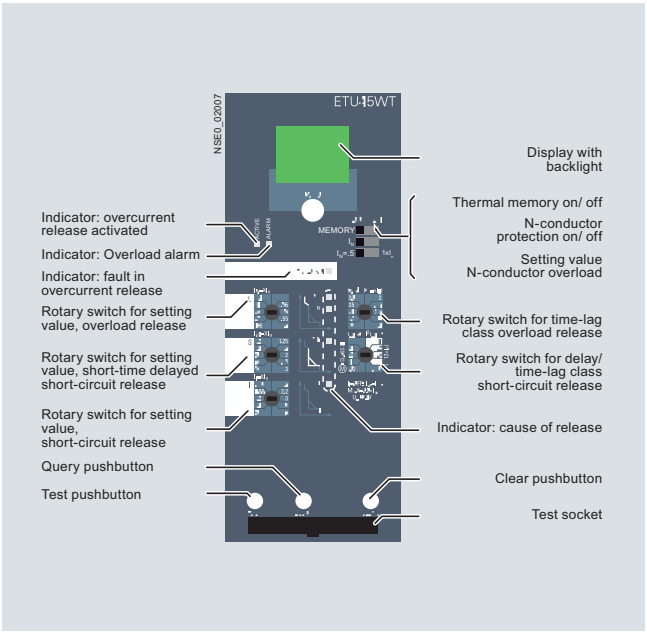
ETU45WT electronic trip unit


NSE0_02007
ETU45WT
MEMORY
Indicator: overcurrent release activated
Indicator: Overload alarm
Indicator: fault in overcurrent release
Rotary switch for setting value, overload release
Rotary switch for setting value, short-time delayed short-circuit release
Rotary switch for setting value, short-circuit release
Query pushbutton
Test pushbutton
Display with backlight
Thermal memory on/ off
N-conductor protection on/ off
Setting value N-conductor overload
Rotary switch for time-lag class overload release
Rotary switch for delay/ time-lag class short-circuit release
Indicator: cause of release
Clear pushbutton
Test socket

Application:

Economical all-round system for intelligent buildings and all types of industrial applications

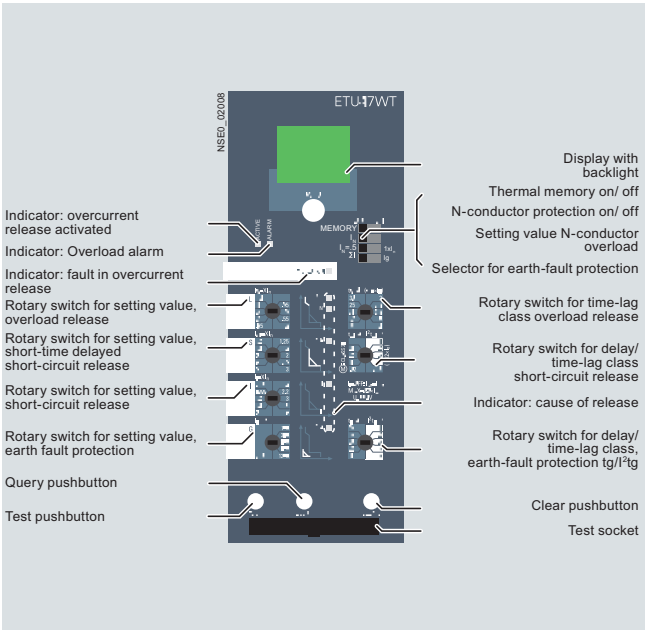
Features:

The same as ETU35WT but also

- Adjustable time-lag class for overload protection
- Selectable characteristic for overlaod and short-delayed short-circuit range (current discrimination) for more accurate discrimination adaptation to upstream fuses and protective devices
- Thermal image as restart protection for tripped motor outgoing feeders
- Reversible and adjustable (incl. turn off) neutral conductor protection
- The protection functions can be set by means of a rotary coding switch or slide switch

For technical details see the table "Functional Overview of the Electronic Trip Unit System" under "Technical Specifications".

ETU47WT electronic trip unit


NSE0_02008
ETU47WT
MEMORY
Indicator: overcurrent release activated
Indicator: Overload alarm
Indicator: fault in overcurrent release
Rotary switch for setting value, overload release
Rotary switch for setting value, short-time delayed short-circuit release
Rotary switch for setting value, short-circuit release
Rotary switch for setting value, earth fault protection
Query pushbutton
Test pushbutton
Display with backlight
Thermal memory on/ off
N-conductor protection on/ off
Setting value N-conductor overload
Selector for earth-fault protection
Rotary switch for time-lag class overload release
Rotary switch for delay/ time-lag class short-circuit release
Indicator: cause of release
Rotary switch for delay/ time-lag class, earth-fault protection tg/I²tg
Clear pushbutton
Test socket

Application:

Economical all-round system for intelligent buildings and all types of industrial applications

Features:

The same as ETU45WT but also

- Ground-fault protection with tripping functions which can be adjusted separately

For technical details see the table "Functional Overview of the Electronic Trip Unit System" under "Technical Specifications".

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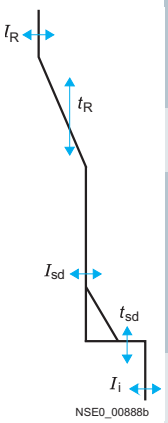
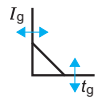
3WT Air Circuit Breakers up to 4000 A (AC)

General data

Protection functions Parameterization by		ETU35WT D	ETU37WT D & S	ETU45WT/ETU47WT D & S
Functional overview of the electronic trip unit system				
 NSE0_00888b	L	**Overload protection** Function can be switched on/off	✓ --	✓ --	✓ --
		Setting range $I_R = I_n \times ...$	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1
		Setting range for time-lag class t_R at I^2t	10 s fixed	10 s fixed	2-3.5-5.5-8-10-14-17-21-25-30 s
		Thermal image can be switched on/off	--	--	✓
		Phase failure sensivity	at t_{sd} = 20 ms (M)	at t_{sd} = 20 ms (M)	at t_{sd} = 20 ms (M)
	N	**Neutral conductor protection**	--	✓	✓
		Function can be switched on/off	--	✓	✓
		N conductor setting range $I_N = I_n \times ...$	--	1	0.5-1
	S	**Short-time delayed short-circuit protection**	✓	✓	✓
		Function can be switched on/off	--	--	✓
		Setting range $I_{sd} = I_n \times ...$	1.25-1.5-2-2.5-3-4-6-8-10-12	1.25-1.5-2-2.5-3-4-6-8-10-12	1.25-1.5-2-2.5-3-4-6-8-10-12
		Setting range for delay time t_{sd}	0-M-100-200-300-400 ms	0-M-100-200-300-400 ms	M-100-200-300-400 ms
		Switchable short-time delayed short-circuit protection (I^2t-dependent function)	--	--	✓
		Setting range for delay time t_{sd} at I^2t	--	--	100-200-300-400 ms
	I	**Instantaneous short-circuit protection**	✓	✓	✓
		Function can be switched on/off	--	--	✓
		Setting range $I_i = I_n \times ...$	fixed for $I_i \geq 20 \times I_n$, max. 50 kA	fixed for $I_i \geq 20 \times I_n$, max. 50 kA	1.5-2.2-3-4-6-8-10-12-0.8 x I_{cs}
 NSE0_00889a	G	**Ground-fault protection**	--	✓ fixed mounted	✓ (only ETU47WT)
		Tripping function can be switched on/off	--	✓	✓ (only ETU47WT)
		Detection of the ground-fault current through summation current formation with internal or external neutral conductor transformer	--	✓	✓ (only ETU47WT)
		Detection of ground-fault current through external transformer	--	--	✓ (only ETU47WT)
		Setting range of the operating current I_g for release	--	OFF-100-300-600-900-1200	OFF-100-300-600-900-1200 (only ETU47WT)
		Setting range of the delay time t_g	--	100-200-300-400-500 ms	100-200-300-400-500 ms (only ETU47WT)
		Switchable ground-fault protection characteristic curve (I^2t-dependent function)	--	--	✓ (only ETU47WT)
		Setting range for delay time t_g at I^2t	--	--	100-200-300-400-500 ms (only ETU47WT)
LCD					
		LCD, with backlight	✓	✓	✓
LED display					
NSE00890		Electronic trip unit active	✓	✓	✓
		Alarm	✓	✓	✓
		ETU fault	✓	✓	✓
		L-release	✓	✓	✓
		S-release	✓	✓	✓
		I-release	✓	✓	✓
		N-release	--	✓	✓
		G-release	--	✓	✓

Delay time figures given in ms.
M = Motor protection, corresponds to 20 ms.
D = Rotary coding switch.
D & S = Rotary coding and slide switch.

✓ Available.
-- Not available.

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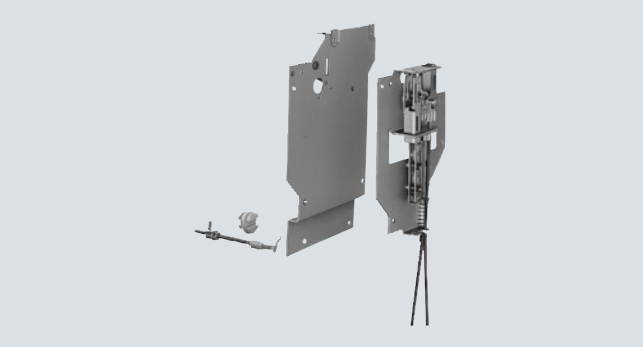
Module for mutual mechanical interlocking

The module for mutual mechanical interlocking can be used for one or two 3WT circuit breakers and can be adapted easily to the corresponding versions.
The fixed-mounted and withdrawable circuit breaker versions are fully compatible and can therefore be used in a mixed configuration in an installation.
The circuit breakers can be mounted alongside each other or one above the other, whereby the spacing of the circuit breakers is determined solely by the length of the Bowden wire. The Bowden wires are supplied in standard lengths of 2 m (length: 2 m/3 m/4.5 m). Interlock signals are looped through via the Bowden wires. Interlocking is only effective in the connected position in the case of withdrawable circuit breakers.
The mechanical endurance of the Bowden wires is 10000 operating cycles.
The interlocking module is mounted on the right-hand side of the fixed-mounted circuit breaker (see illustration) or the guide frame.

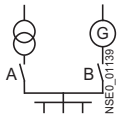
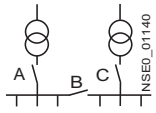
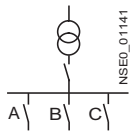
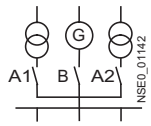
Minimum requirements must be fulfilled in the switchgear for the interlocking to function:

- Bowden wires must be installed as far as possible in a straight line with minimum bending.
- The bending radii of the Bowden wire must be greater than 500 mm.
- The sum of all bending angles along the Bowden wire must not exceed 640°.
- In a vertical arrangement of circuit breakers to be interlocked, the interlocking mechanisms must be in line.
- Circuit breakers to be interlocked must be arranged so that Bowden wires can be optimally installed in compliance with the conditions mentioned in the above points.
- The installed Bowden wire must be fixed (with cable ties or the like) before the interlock is adjusted.
- Select the width of switchgear cubicle to allow enough freedom of movement for adjusting the interlock!
- Openings and cut-outs in system elements must be designed so that Bowden wires are not changed in direction or obstructed when they are passed through.

3WT circuit breaker, 3-pole, with interlocking module and Bowden wire



Interlocking module with Bowden wire

Example	Version	Switch status	Description
	1	A B 0 0 1 0 0 1	2 circuit breakers alongside each other: One circuit breaker can only be closed when the other has been switched off. Each circuit breaker has an interlocking module and a Bowden wire.
	2	A B C 0 0 0 1 0 0 0 1 0 0 0 1 1 1 0 0 1 1 1 0 1	3 circuit breakers one above the other: Any two circuit breakers can always be closed, with the third one being interlocked. Each circuit breaker has an interlocking module and a Bowden wire. An additional Bowden wire must be ordered separately for each circuit breaker.
	3	A B C 0 0 0 1 0 0 0 1 0 0 0 1	3 circuit breakers one above the other: When one circuit breaker is closed the other two circuit breakers cannot be closed. The interlocking mechanism of each circuit breaker consists of an interlocking module and a Bowden wire. An additional Bowden wire must be ordered separately for each circuit breaker.
	4	A1 B A2 0 0 0 1 0 0 0 0 1 1 0 1 0 1 0	3 circuit breakers alongside each other: Two circuit breakers can be closed and opened independently of each other, while the third is only ready to close when the two others are open. If the third circuit breaker is closed, the other two circuit breakers cannot be closed. All three circuit breakers each have an interlocking module and a Bowden wire. A Bowden wire must be ordered separately.

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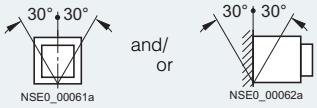
General data

Technical specifications

Size					I					
Type					**3WT80 4**	**3WT80 6**	**3WT80 8**	**3WT81 0**	**3WT81 2**	**3WT81 6**
Rated current I_n at 50 °C, at 50/60 Hz	Main conductor			A	400	630	800	1000	1250	1600
	Neutral conductor (only on 4-pole version)			A	400	630	800	1000	1250	1600
Rated operating voltage U_e at 50/60 Hz				AC V	up to 500					
Rated impulse withstand voltage U_{imp}	Main circuits[1]			kV	8					
	Auxiliary circuits			kV	4					
Utilization category					B					
Rated short-circuit making capacity I_{cm} (peak value)	ecoline	up to 500 V AC		kA	121					--
	standard	500 V AC		kA	145					
Rated service short-circuit breaking capacity I_{cs} (rms value)	ecoline	up to 500 V AC		kA	55					--
	standard	500 V AC		kA	66					
Rated ultimate short-circuit breaking capacity I_{cu} (rms value)	ecoline	up to 500 V AC		kA	55					--
	standard	500 V AC		kA	66					
Permissible ambient temperatures	Operation			°C	–20 ... +70					
	Storage			°C	–40 ... +80					
Rated short-time withstand current I_{cw} at 50/60 Hz	0.5 s			kA	50					
	1 s			kA	35[2]/50					
	2 s			kA	25[2]/30					
	3 s			kA	20[2]/25					
	4 s			kA	17[2]/20					
Permissible load for fixed-mounted and withdrawable circuit breakers at cabinet interior temperature[3][4]	up to 50 °C			A	400	630	800	1000	1250	1600
	at 60 °C			A	400	630	800	950	1120	1500
	at 70 °C			A	400	600	700	800	1000	1350
Rated rotor operating voltage U_{er}				V	2000					
Power loss at I_n with 3-phase symmetr. load (without line-side busbars and metal components[4])	Fixed-mounted circuit breaker			W	25	40	60	90	120	140
	Withdrawable circuit breaker including guide frame			W	50	80	130	205	255	310
Endurance										
without maintenance	mechanical	Operating cycles			8000					
	electrical[6]				5000					
with maintenance[5]	mechanical	Operating cycles			16000					
	electrical[6]				10000					
Operating frequency				1/min	1					
Minimum interval between tripping operation by electronic trip unit and next making operation of the circuit breaker (only with automatic mechanical resetting of the lockout device)				ms	80					
Service position										
Degree of protection					Circuit breaker IP20, when fitted in cabinet or frame Operator panel with door sealing frame IP40					
Main conductor minimum cross-sections	Copper bars, bare			Qty, mm²	1 × 50 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 60 × 10	2 × 60 × 10
	Copper bars, painted black			Qty, mm²	1 × 40 × 10	1 × 40 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10
Auxiliary conductors (Cu)	Max. no. of aux. conductors × cross-section	solid and finely stranded with end sleeves			1 × 0.5 ... 2.5 mm²; 1 × AWG 14 2 ×1.0 mm²					
Weights	3-pole circuit breakers	Fixed-mounted circuit breaker		approx. kg	34	34	34	34	34	36
		Withdrawable circuit breaker		approx. kg	36	36	36	36	36	38
		Guide frame		approx. kg	22	22	22	22	22	23
	4-pole circuit breakers	Fixed-mounted circuit breaker		approx. kg	47	47	47	47	47	49
		Withdrawable circuit breaker		approx. kg	49	49	49	49	49	51
		Guide frame		approx. kg	27	27	27	27	27	28

1) Rated insulation voltage U_i = 1000 V AC.

2) Ecoline.

3) The temperatures apply to the air surrounding the upper third of the circuit breaker.

4) These values apply in the case of sinusoidal current (50/60 Hz). The heating/losses increase in the event of harmonics and higher frequencies.

5) Maintenance: replacement of the contact set and arc chute.

6) Per contact set. Disconnect. of the rated current I_n and power factor = 0.8.

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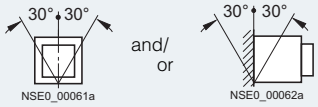
3WT Air Circuit Breakers up to 4000 A (AC)

Size					II				
Type					**3WT82 0**	**3WT82 5**	**3WT83 2**	**3WT84 0**	
Rated current I_n at 50 °C, at 50/60 Hz[1]	Main conductor			A	2000	2500	3200	3800 (withdrawable)	4000 (fixed-mounted)
	Neutral conductor (only on 4-pole version)			A	2000	2500	3200	3800 (withdrawable)	4000 (fixed-mounted)
Rated operating voltage U_e at 50/60 Hz				AC V	up to 500				
Rated impulse withstand voltage U_{imp}	Main circuits[2]			kV	8				
	Auxiliary circuits			kV	4				
Utilization category					B				
Rated short-circuit making capacity I_{cm} (peak value)		up to							
	ecoline	500 V AC		kA	--				
	standard	500 V AC		kA	145				
Rated service short-circuit breaking capacity I_{cs} (rms value)		up to							
	ecoline	500 V AC		kA	--				
	standard	500 V AC		kA	66				
Rated ultimate short-circuit breaking capacity I_{cu} (rms value)		up to							
	ecoline	500 V AC		kA	--				
	standard	500 V AC		kA	66				
Permissible ambient temperatures	Operation			°C	–20 ... +70				
	Storage			°C	–40 ... +80				
Rated short-time withstand current I_{cw} at 50/60 Hz	0.5 s			kA	66				
	1 s			kA	66				
	2 s			kA	55				
	3 s			kA	45				
	4 s			kA	35				
Permissible load for fixed-mounted and withdrawable circuit breakers at cabinet interior temperature[3][4]	up to 50 °C[1]			A	2000	2500	3200	3800[5]	4000[6]
	at 60 °C			A	1950	2150	2900		
	at 70 °C			A	1800	1950	2700		
Rated rotor operating voltage U_{er}				V	2000				
Power loss at I_n with 3-phase symmetr. load (without line-side busbars and metal components[4])	Fixed-mounted circuit breaker			W	170	325	420	--	902
	Withdrawable circuit breaker including guide frame			W	310	535	760	1050	--
Endurance									
without maintenance	mechanical		Operating cycles		6000				
	electrical[8]				2000				
with maintenance[7]	mechanical		Operating cycles		12000				
	electrical[8]				4000				
Operating frequency				1/min	1				
Minimum interval between tripping operation by electronic trip unit and next making operation of the circuit breaker (only with automatic mechanical resetting of the lockout device)				ms	80				
Service position					 NSE0_00061a NSE0_00062a				
Degree of protection					Circuit breaker IP20, when fitted in cabinet or frame Operator panel with door sealing frame IP40				
Main conductor minimum cross-sections	Copper bars, bare			Qty, mm^2	2 × 100 × 10	3 × 100 × 10	3 × 100 × 10	4 × 120 × 10	4 × 120 × 10
	Copper bars, painted black			Qty, mm^2	2 × 80 × 10	2 × 100 × 10	3 × 100 × 10	4 × 100 × 10	4 × 100 × 10
Auxiliary conductors (Cu)	Max. no. of aux. conductors × cross-section	solid and finely stranded with end sleeves			1 × 0.5 ... 2.5 mm^2; 1 × AWG 14 2 ×1.0 mm^2				
Weights	3-pole circuit breakers	Fixed-mounted circuit breaker		approx. kg	57	57	61	--	92[9]
		Withdrawable circuit breaker		approx. kg	59	59	63	64	--
		Guide frame		approx. kg	35	35	37	54[9]	--
	4-pole circuit breakers	Fixed-mounted circuit breaker		approx. kg	70	70	74	--	106[9]
		Withdrawable circuit breaker		approx. kg	72	72	76	77	--
		Guide frame		approx. kg	46	46	48	64[9]	--

1) At 3WT84 0: 40 °C.

2) Rated insulation voltage U_i = 1000 V AC.

3) The temperatures apply to the air surrounding the upper third of the circuit breaker.

4) These values apply in the case of sinusoidal current (50/60 Hz). The heating/losses increase in the event of harmonics and higher frequencies.

5) Withdrawable circuit breakers.

6) Fixed-mounted circuit breakers.

7) Maintenance: replacement of the contact set and arc chute.

8) Per contact set. Disconnect. of the rated current I_n and power factor = 0.8.

9) Including vertical busbars.

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General data

				3WT
Operating mechanisms				
Manual operating mechanism with mechanical closing				
Closing	Max. force required to operate the hand lever		N	210
Charging stored-energy feature	Required number of strokes on the hand lever			5
Manual operating mechanism with mechanical and electrical closing				
Charging stored-energy feature				see "Manual operating mechanism with mechanical closing"
Closing solenoid (Y1)	Operating range			0.7 ... 1.1 × U_s
	Extended operating range for battery operation[1]	for 24 V DC, 110 V DC, 220 V DC		0.7 ... 1.26 × U_s
	Power input	AC/DC	VA/W	15
	Minimum command duration at U_s for the activation solenoid		ms	60
	Total closing time at U_s after start of closing command for the activation solenoid, suitable for synchronizing tasks		ms	80
	Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/miniature circuit breaker with C-characteristic			1 A TDz (time-lag)/1 A
Manual/motor operating mechanism with mechanical and electrical closing				
Manual operating mechanism				see "Manual operating mechanism with mechanical closing"
Motor	Operating range			0.7 ... 1.1 × U_s
	Extended operating range for battery operation[1]	for 24 V DC, 110 V DC, 220 V DC		0.7 ... 1.26 × U_s
	Power input to motor	AC/DC	VA/W	40
	Time required to charge the stored-energy mechanism	1 × U_s	s	20
Closing solenoid				see "Manual operating mechanism with mechanical and electrical closing"
	Short-circuit protection			
	Motor and activation solenoid for the same rated control supply voltages:			
For motor and closing solenoid	Smallest permissible DIAZED fuse (operational class gL)/miniature circuit breaker with C-characteristic	at U_s = 24 V		2 A TDz (time-lag)/2 A
		at U_s = 110 ...127 V		1 A TDz (time-lag)/1 A
		at U_s = 220 ... 250 V		1 A TDz (time-lag)/1 A
Auxiliary releases				
Shunt release "f" (F1, F2)	Operating value	pickup		≥ 0.7 × U_s (circuit breaker is tripped)
	Operating range			0.7 ... 1.1 × U_s
	For continuous command (100 % duty ratio), locks out on momentary-contact commands			
	Extended operating range for battery operation[1]	for 24 V DC, 110 V DC, 220 V DC		0.7 ... 1.26 × U_s
	Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110 ... 127, 220 ... 240 24, 110 ... 125, 220 ... 250
	Power input	AC/DC	VA/W	15
	Minimum command duration at U_s		ms	60
	Opening time of circuit breaker at U_s = 100 %	AC/DC	ms	≤ 80

[1] The operating range is only permissible for the specified rated voltages and corresponds to the battery charging voltage.

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					3WT			
Auxiliary releases								
Undervoltage release "r" (F3) and "rc" (F8)	Operating values	pickup dropout			≥ 0.85 × U_s (circuit breaker can be closed) (0.35 ... 0.7) × U_s (circuit breaker is tripped)			
	Operating range				0.85 ... 1.1 × U_s			
	Extended operating range in battery operation[1]	for 24 V DC, 110 V DC, 220 V DC			0.7 ... 1.26 × U_s			
	Rated control supply voltage U_s	AC 50/60 Hz DC	V V		110 ... 127, 220 ... 240, 380 ... 415 24, 110 ... 125, 220 ... 250			
	Power input	AC DC	VA W		15 15			
	Opening time of circuit breaker at U_s = 0							
	Version "r" (F3) Instantaneous With 100 ms delay		 ms ms		 ≤ 100 ≤ 300			
	Version "rc" (F8) With delay, t_d = 0.2 ... 3.2 s		s		0.2 ... 3.2			
	Reset via additional NC contact – direct switching-off		ms		≤ 100			
	Short-circuit protection							
	Smallest permissible DIAZED fuse (operational class gL) /miniature circuit breaker with C-characteristic				1 A TDz (time-lag)1 A			
Contact position-driven auxiliary switches (S1, S2, S3, S4)								
Rated insulation voltage U_i			AC/DC V		400 V			
Rated operating voltage U_e					400 V			
Switching capacity	AC, 50/60 Hz	Rated operating voltage U_e	V		up to 24	110	220/230	380/400
		Rated operating current I_e/AC-12	A		10	10	10	10
		Rated operating current I_e/AC-15	A		6	6	6	4
	DC	Rated operating voltage U_e	V		24	110	220	
		Rated operating current I_e/DC-12	A		10	3.5	1	
		Rated operating current I_e/DC-13	A		10	1.2	0.4	
Short-circuit protection[2]		Largest permissible DIAZED fuse (operational class gL/gG) Largest permissible miniature circuit breaker with C-characteristic			10 A TDz, 16 A Dz 10 A			
Ready-to-close signaling switch (S7) and "tripped" signaling switch (S11)								
Switching capacity	AC, 50/60 Hz	Rated operating voltage U_e	V		110	220		
		Rated operating current I_e	A		0.14	0.1		
	DC	Rated operating voltage U_e	V		24	220		
		Rated operating current I_e	A		0.2	0.1		
Short-circuit protection[2]		Largest permissible DIAZED fuse (operational class gL)			2 A Dz (quick)			
"Tripped" signaling switch (S11)		Signal duration after tripping			continuous, until reset			

[1] The operating range is only permissible for the specified rated voltages and corresponds to the battery charging voltage.

[2] Without any welding of the contacts only at I_k ≤ 1 kA in accordance with IEC 60947-5-1.

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3- and 4-pole, withdrawable version inclusive standard accessories

Selection and ordering data – quick selection

Size	Rated current I_n	Short-circuit breaking capacity I_{cu} /500 V	Short-time withstand current, I_{cw}/500 V 1 s [1]	3-pole Order No.	3-pole Basic price	3-pole Weight approx.	4-pole Order No.	4-pole Basic price	4-pole Weight approx.
	A	kA	kA			kg			kg
ETU35WT, horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-5UA34-5AB2**		58.000	**3WT80 44-5UA34-5AB2**		76.000
I	630	55	50	**3WT80 60-5UA34-5AB2**		58.000	**3WT80 64-5UA34-5AB2**		76.000
I	800	55	50	**3WT80 80-5UA34-5AB2**		58.000	**3WT80 84-5UA34-5AB2**		76.000
I	1000	55	50	**3WT81 00-5UA34-5AB2**		58.000	**3WT81 04-5UA34-5AB2**		76.000
I	1250	55	50	**3WT81 20-5UA34-5AB2**		58.000	**3WT81 24-5UA34-5AB2**		76.000
ETU35WT, horizontal main circuit connection									
I	400	66	50	**3WT80 41-5UA34-5AB2**		58.000	**3WT80 45-5UA34-5AB2**		76.000
I	630	66	50	**3WT80 61-5UA34-5AB2**		58.000	**3WT80 65-5UA34-5AB2**		76.000
I	800	66	50	**3WT80 81-5UA34-5AB2**		58.000	**3WT80 85-5UA34-5AB2**		76.000
I	1000	66	50	**3WT81 01-5UA34-5AB2**		58.000	**3WT81 05-5UA34-5AB2**		76.000
I	1250	66	50	**3WT81 21-5UA34-5AB2**		58.000	**3WT81 25-5UA34-5AB2**		76.000
I	1600	66	50	**3WT81 61-5UA34-5AB2**		61.000	**3WT81 65-5UA34-5AB2**		79.000
II	2000	66	66	**3WT82 02-5UA34-5AB2**		94.000	**3WT82 06-5UA34-5AB2**		118.000
II	2500	66	66	**3WT82 52-5UA34-5AB2**		94.000	**3WT82 56-5UA34-5AB2**		118.000
II	3200	66	66	**3WT83 22-5UA34-5AB2**		100.000	**3WT83 26-5UA34-5AB2**		124.000
ETU35WT, vertical main circuit connection									
II	3800	66	66	**3WT84 02-5UA36-5AB2**		118.000	**3WT84 06-5UA36-5AB2**		141.000
ETU37WT, horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-6UA34-5AB2**		58.000	**3WT80 44-6UA34-5AB2**		76.000
I	630	55	50	**3WT80 60-6UA34-5AB2**		58.000	**3WT80 64-6UA34-5AB2**		76.000
I	800	55	50	**3WT80 80-6UA34-5AB2**		58.000	**3WT80 84-6UA34-5AB2**		76.000
I	1000	55	50	**3WT81 00-6UA34-5AB2**		58.000	**3WT81 04-6UA34-5AB2**		76.000
I	1250	55	50	**3WT81 20-6UA34-5AB2**		58.000	**3WT81 24-6UA34-5AB2**		76.000
ETU37WT, horizontal main circuit connection									
I	400	66	50	**3WT80 41-6UA34-5AB2**		58.000	**3WT80 45-6UA34-5AB2**		76.000
I	630	66	50	**3WT80 61-6UA34-5AB2**		58.000	**3WT80 65-6UA34-5AB2**		76.000
I	800	66	50	**3WT80 81-6UA34-5AB2**		58.000	**3WT80 85-6UA34-5AB2**		76.000
I	1000	66	50	**3WT81 01-6UA34-5AB2**		58.000	**3WT81 05-6UA34-5AB2**		76.000
I	1250	66	50	**3WT81 21-6UA34-5AB2**		58.000	**3WT81 25-6UA34-5AB2**		76.000
I	1600	66	50	**3WT81 61-6UA34-5AB2**		61.000	**3WT81 65-6UA34-5AB2**		79.000
II	2000	66	66	**3WT82 02-6UA34-5AB2**		94.000	**3WT82 06-6UA34-5AB2**		118.000
II	2500	66	66	**3WT82 52-6UA34-5AB2**		94.000	**3WT82 56-6UA34-5AB2**		118.000
II	3200	66	66	**3WT83 22-6UA34-5AB2**		100.000	**3WT83 26-6UA34-5AB2**		124.000
ETU37WT, vertical main circuit connection									
II	3800	66	66	**3WT84 02-6UA36-5AB2**		118.000	**3WT84 06-6UA36-5AB2**		141.000

Electronic trip unit (ETU)

ETU35WT: protection functions LSI with LCD display
ETU37WT: protection functions LSING[2] with LCD display

Accessories included

Motor operated mechanism,
with mechanical and electrical closing,
motor and closing solenoid 220-240 V AC 50/60 Hz,
220-250 V DC,
Shunt release "F" 220-240 V AC 50/60 Hz,
220-250 V DC
with door sealing frame IP40, sealing cap over OFF button,
and shutter
without 2nd auxiliary release,
with auxiliary switch 2 NO + 2 NC,
with shutter

[1] I_{cw}/500 V 0.5 s for ecoline.

[2] Current transformer for overload protection in the neutral conductor and for ground-fault protection must be ordered separately, see page 2/30.

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3- and 4-pole, fixed-mounted version inclusive standard accessories

Selection and ordering data – quick selection

Size	Rated current I_n	Short-circuit breaking capacity I_{cu} /500 V	Short-time withstand current, I_{cw} /500 V 1 s[1]	3-pole Order No.	3-pole Basic price	3-pole Weight approx.	4-pole Order No.	4-pole Basic price	4-pole Weight approx.
	A	kA	kA			kg			kg
ETU35WT, horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-5UA30-0AA2**		34.000	**3WT80 44-5UA30-0AA2**		47.000
I	630	55	50	**3WT80 60-5UA30-0AA2**		34.000	**3WT80 64-5UA30-0AA2**		47.000
I	800	55	50	**3WT80 80-5UA30-0AA2**		34.000	**3WT80 84-5UA30-0AA2**		47.000
I	1000	55	50	**3WT81 00-5UA30-0AA2**		34.000	**3WT81 04-5UA30-0AA2**		47.000
I	1250	55	50	**3WT81 20-5UA30-0AA2**		34.000	**3WT81 24-5UA30-0AA2**		47.000
ETU35WT, horizontal main circuit connection									
I	400	66	50	**3WT80 41-5UA30-0AA2**		34.000	**3WT80 45-5UA30-0AA2**		47.000
I	630	66	50	**3WT80 61-5UA30-0AA2**		34.000	**3WT80 65-5UA30-0AA2**		47.000
I	800	66	50	**3WT80 81-5UA30-0AA2**		34.000	**3WT80 85-5UA30-0AA2**		47.000
I	1000	66	50	**3WT81 01-5UA30-0AA2**		34.000	**3WT81 05-5UA30-0AA2**		47.000
I	1250	66	50	**3WT81 21-5UA30-0AA2**		34.000	**3WT81 25-5UA30-0AA2**		47.000
I	1600	66	50	**3WT81 61-5UA30-0AA2**		36.000	**3WT81 65-5UA30-0AA2**		49.000
II	2000	66	66	**3WT82 02-5UA30-0AA2**		57.000	**3WT82 06-5UA30-0AA2**		70.000
II	2500	66	66	**3WT82 52-5UA30-0AA2**		57.000	**3WT82 56-5UA30-0AA2**		70.000
II	3200	66	66	**3WT83 22-5UA30-0AA2**		61.000	**3WT83 26-5UA30-0AA2**		74.000
ETU35WT, vertical main circuit connection									
II	4000	66	66	**3WT84 02-5UA32-0AA2**		92.000	**3WT84 06-5UA32-0AA2**		106.000
ETU37WT, horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-6UA30-0AA2**		34.000	**3WT80 44-6UA30-0AA2**		47.000
I	630	55	50	**3WT80 60-6UA30-0AA2**		34.000	**3WT80 64-6UA30-0AA2**		47.000
I	800	55	50	**3WT80 80-6UA30-0AA2**		34.000	**3WT80 84-6UA30-0AA2**		47.000
I	1000	55	50	**3WT81 00-6UA30-0AA2**		34.000	**3WT81 04-6UA30-0AA2**		47.000
I	1250	55	50	**3WT81 20-6UA30-0AA2**		34.000	**3WT81 24-6UA30-0AA2**		47.000
ETU37WT, horizontal main circuit connection									
I	400	66	50	**3WT80 41-6UA30-0AA2**		34.000	**3WT80 45-6UA30-0AA2**		47.000
I	630	66	50	**3WT80 61-6UA30-0AA2**		34.000	**3WT80 65-6UA30-0AA2**		47.000
I	800	66	50	**3WT80 81-6UA30-0AA2**		34.000	**3WT80 85-6UA30-0AA2**		47.000
I	1000	66	50	**3WT81 01-6UA30-0AA2**		34.000	**3WT81 05-6UA30-0AA2**		47.000
I	1250	66	50	**3WT81 21-6UA30-0AA2**		34.000	**3WT81 25-6UA30-0AA2**		47.000
I	1600	66	50	**3WT81 61-6UA30-0AA2**		36.000	**3WT81 65-6UA30-0AA2**		49.000
II	2000	66	66	**3WT82 02-6UA30-0AA2**		57.000	**3WT82 06-6UA30-0AA2**		70.000
II	2500	66	66	**3WT82 52-6UA30-0AA2**		57.000	**3WT82 56-6UA30-0AA2**		70.000
II	3200	66	66	**3WT83 22-6UA30-0AA2**		61.000	**3WT83 26-6UA30-0AA2**		74.000
ETU37WT, vertical main circuit connection									
II	4000	66	66	**3WT84 02-6UA32-0AA2**		92.000	**3WT84 06-6UA32-0AA2**		106.000

Electronic trip unit (ETU)

ETU35WT: protection functions LSI with LCD display
ETU37WT: protection functions LSING[2] with LCD display

Accessories included

Motor operated mechanism,
with mechanical and electrical closing,
motor and closing solenoid 220-240 V AC 50/60 Hz,
220-250 V DC,
Shunt release "F" 220-240 V AC 50/60 Hz,
220-250 V DC
with door sealing frame IP40,
without 2nd auxiliary release,
with auxiliary switch 2 NO + 2 NC

1) I_{cw}/500 V 0.5 s for ecoline.

2) Current transformer for overload protection in the neutral conductor and for ground-fault protection must be ordered separately, see page 2/30.

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3- and 4-pole, withdrawable version

Selection and ordering data

Size	Rated current I_n	Short-circuit breaking capacity I_{cu} /500 V	Short-time withstand current, I_{cw}/500 V 1 s [1]	3-pole Order No.	Basic price	Weight approx.	4-pole Order No.	Basic price	Weight approx.
				Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.			Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.		
	A	kA	kA			kg			kg
Horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-□□□□4-□□□□**		58.000	**3WT80 44-□□□□4-□□□□**		76.000
I	630	55	50	**3WT80 60-□□□□4-□□□□**		58.000	**3WT80 64-□□□□4-□□□□**		76.000
I	800	55	50	**3WT80 80-□□□□4-□□□□**		58.000	**3WT80 84-□□□□4-□□□□**		76.000
I	1000	55	50	**3WT81 00-□□□□4-□□□□**		58.000	**3WT81 04-□□□□4-□□□□**		76.000
I	1250	55	50	**3WT81 20-□□□□4-□□□□**		58.000	**3WT81 24-□□□□4-□□□□**		76.000
Horizontal main circuit connection									
I	400	66	50	**3WT80 41-□□□□4-□□□□**		58.000	**3WT80 45-□□□□4-□□□□**		76.000
I	630	66	50	**3WT80 61-□□□□4-□□□□**		58.000	**3WT80 65-□□□□4-□□□□**		76.000
I	800	66	50	**3WT80 81-□□□□4-□□□□**		58.000	**3WT80 85-□□□□4-□□□□**		76.000
I	1000	66	50	**3WT81 01-□□□□4-□□□□**		58.000	**3WT81 05-□□□□4-□□□□**		76.000
I	1250	66	50	**3WT81 21-□□□□4-□□□□**		58.000	**3WT81 25-□□□□4-□□□□**		76.000
I	1600	66	50	**3WT81 61-□□□□4-□□□□**		61.000	**3WT81 65-□□□□4-□□□□**		79.000
II	2000	66	66	**3WT82 02-□□□□4-□□□□**		94.000	**3WT82 06-□□□□4-□□□□**		118.000
II	2500	66	66	**3WT82 52-□□□□4-□□□□**		94.000	**3WT82 56-□□□□4-□□□□**		118.000
II	3200	66	66	**3WT83 22-□□□□4-□□□□**		100.000	**3WT83 26-□□□□4-□□□□**		124.000
Horizontal main circuit connection at top, vertical connection at bottom (ecoline)[5]									
I	400	55	50	**3WT80 40-□□□□8-□□□□**		58.000	**3WT80 44-□□□□8-□□□□**		76.000
I	630	55	50	**3WT80 60-□□□□8-□□□□**		58.000	**3WT80 64-□□□□8-□□□□**		76.000
I	800	55	50	**3WT80 80-□□□□8-□□□□**		58.000	**3WT80 84-□□□□8-□□□□**		76.000
I	1000	55	50	**3WT81 00-□□□□8-□□□□**		58.000	**3WT81 04-□□□□8-□□□□**		76.000
I	1250	55	50	**3WT81 20-□□□□8-□□□□**		58.000	**3WT81 24-□□□□8-□□□□**		76.000
Horizontal main circuit connection at top, vertical connection at bottom[5]									
I	400	66	50	**3WT80 41-□□□□8-□□□□**		58.000	**3WT80 45-□□□□8-□□□□**		76.000
I	630	66	50	**3WT80 61-□□□□8-□□□□**		58.000	**3WT80 65-□□□□8-□□□□**		76.000
I	800	66	50	**3WT80 81-□□□□8-□□□□**		58.000	**3WT80 85-□□□□8-□□□□**		76.000
I	1000	66	50	**3WT81 01-□□□□8-□□□□**		58.000	**3WT81 05-□□□□8-□□□□**		76.000
I	1250	66	50	**3WT81 21-□□□□8-□□□□**		58.000	**3WT81 25-□□□□8-□□□□**		76.000
I	1600	66	50	**3WT81 61-□□□□8-□□□□**		61.000	**3WT81 65-□□□□8-□□□□**		79.000
II	2000	66	66	**3WT82 02-□□□□8-□□□□**		94.000	**3WT82 06-□□□□8-□□□□**		118.000
II	2500	66	66	**3WT82 52-□□□□8-□□□□**		94.000	**3WT82 56-□□□□8-□□□□**		118.000
II	3200	66	66	**3WT83 22-□□□□8-□□□□**		100.000	**3WT83 26-□□□□8-□□□□**		124.000

	Order No. supplements	Additional price	Order No. supplements	Additional price
Electronic trip unit (ETU; 8th position of Order No.)				
ETU35WT: LSI with LCD display	**5**	**X**	**5**	**X**
ETU37WT: LSING[2] with LCD display	**6**	**X**	**6**	**X**
ETU45WT: LSIN[2] with LCD display and additional features	**7**	**X**	**7**	**X**
ETU47WT: LSING[2] with LCD display and additional features	**8**	**X**	**8**	**X**
Operating mechanism, auxiliary release, auxiliary switch (9th to 11th position of Order No., further options see page 2/23)				
Manual operating mechanism, with mechanical closing, without 1st and 2nd auxiliary releases, with auxiliary switch 2 NO + 2 NC	**AA0**	without	**AA0**	without
Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)				
with door sealing frame IP40,	**5AA2**	without	**5AA2**	without
with door sealing frame IP40, sealing cap over OFF button, and shutter size I, up to 1600 A	[4] **5AB2**	**X**	[4] **5AB2**	**X**
size II, 2000 ... 3800 A		**X**		**X**
with door sealing frame IP40, safety lock device CES instead of OFF button[3] (key removable in OFF position); and shutter size I, up to 1600 A	[4] **5AF2**	**X**	[4] **5AF2**	**X**
size II, 2000 ... 3800 A		**X**		**X**

X = additional price

[1] I_{cw}/500 V 0.5 s for ecoline.

[2] Current transformer for overload protection in the neutral conductor and for ground-fault protection must be ordered separately, see page 2/30.

[3] This disables mechanical or electrical ON commands.

[4] Not available for circuit breakers without guide frame, see also page 2/24.

[5] Can be converted to vertical at top and horizontal main connection at bottom.

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3WT Air Circuit Breakers up to 4000 A (AC)

3- and 4-pole, withdrawable version

Size	Rated current I_n	Short-circuit breaking capacity I_{cu} /500 V	Short-time withstand current, I_{cw}/500 V 1 s[1]	3-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.	4-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.
	A	kA	kA			kg			kg
Vertical main circuit connection, top and bottom (ecoline)									
I	400	55	50	**3WT80 40-□□□□6-□□□□**		58.000	**3WT80 44-□□□□6-□□□□**		76.000
I	630	55	50	**3WT80 60-□□□□6-□□□□**		58.000	**3WT80 64-□□□□6-□□□□**		76.000
I	800	55	50	**3WT80 80-□□□□6-□□□□**		58.000	**3WT80 84-□□□□6-□□□□**		76.000
I	1000	55	50	**3WT81 00-□□□□6-□□□□**		58.000	**3WT81 04-□□□□6-□□□□**		76.000
I	1250	55	50	**3WT81 20-□□□□6-□□□□**		58.000	**3WT81 24-□□□□6-□□□□**		76.000
Vertical main circuit connection, top and bottom									
I	400	66	50	**3WT80 41-□□□□6-□□□□**		58.000	**3WT80 45-□□□□6-□□□□**		76.000
I	630	66	50	**3WT80 61-□□□□6-□□□□**		58.000	**3WT80 65-□□□□6-□□□□**		76.000
I	800	66	50	**3WT80 81-□□□□6-□□□□**		58.000	**3WT80 85-□□□□6-□□□□**		76.000
I	1000	66	50	**3WT81 01-□□□□6-□□□□**		58.000	**3WT81 05-□□□□6-□□□□**		76.000
I	1250	66	50	**3WT81 21-□□□□6-□□□□**		58.000	**3WT81 25-□□□□6-□□□□**		76.000
I	1600	66	50	**3WT81 61-□□□□6-□□□□**		61.000	**3WT81 65-□□□□6-□□□□**		79.000
II	2000	66	66	**3WT82 02-□□□□6-□□□□**		94.000	**3WT82 06-□□□□6-□□□□**		118.000
II	2500	66	66	**3WT82 52-□□□□6-□□□□**		94.000	**3WT82 56-□□□□6-□□□□**		118.000
II	3200	66	66	**3WT83 22-□□□□6-□□□□**		100.000	**3WT83 26-□□□□6-□□□□**		124.000
II	3800	66	66	**3WT84 02-□□□□6-□□□□**		118.000	**3WT84 06-□□□□6-□□□□**		141.000
Without guide frame (ecoline; guide frame see page 2/30)									
I	400	55	50	**3WT80 40-□□□□3-□□□□**		36.000	**3WT80 44-□□□□3-□□□□**		49.000
I	630	55	50	**3WT80 60-□□□□3-□□□□**		36.000	**3WT80 64-□□□□3-□□□□**		49.000
I	800	55	50	**3WT80 80-□□□□3-□□□□**		36.000	**3WT80 84-□□□□3-□□□□**		49.000
I	1000	55	50	**3WT81 00-□□□□3-□□□□**		36.000	**3WT81 04-□□□□3-□□□□**		49.000
I	1250	55	50	**3WT81 20-□□□□3-□□□□**		36.000	**3WT81 24-□□□□3-□□□□**		49.000
Without guide frame (guide frame see page 2/30)									
I	400	66	50	**3WT80 41-□□□□3-□□□□**		36.000	**3WT80 45-□□□□3-□□□□**		49.000
I	630	66	50	**3WT80 61-□□□□3-□□□□**		36.000	**3WT80 65-□□□□3-□□□□**		49.000
I	800	66	50	**3WT80 81-□□□□3-□□□□**		36.000	**3WT80 85-□□□□3-□□□□**		49.000
I	1000	66	50	**3WT81 01-□□□□3-□□□□**		36.000	**3WT81 05-□□□□3-□□□□**		49.000
I	1250	66	50	**3WT81 21-□□□□3-□□□□**		36.000	**3WT81 25-□□□□3-□□□□**		49.000
I	1600	66	50	**3WT81 61-□□□□3-□□□□**		38.000	**3WT81 65-□□□□3-□□□□**		51.000
II	2000	66	66	**3WT82 02-□□□□3-□□□□**		59.000	**3WT82 06-□□□□3-□□□□**		72.000
II	2500	66	66	**3WT82 52-□□□□3-□□□□**		59.000	**3WT82 56-□□□□3-□□□□**		72.000
II	3200	66	66	**3WT83 22-□□□□3-□□□□**		63.000	**3WT83 26-□□□□3-□□□□**		76.000

	Order No. supplements	Additional price	Order No. supplements	Additional price
Electronic trip unit (ETU; 8th position of Order No.)				
ETU35WT: LSI with LCD display	**5**	**X**	**5**	**X**
ETU37WT: LSING[2] with LCD display	**6**	**X**	**6**	**X**
ETU45WT: LSIN[2] with LCD display and additional features	**7**	**X**	**7**	**X**
ETU47WT: LSING[2] with LCD display and additional features	**8**	**X**	**8**	**X**
Operating mechanism, auxiliary release, auxiliary switch (9th to 11th position of Order No., further options see page 2/23)				
Manual operating mechanism, with mechanical closing, without 1st and 2nd auxiliary releases, with auxiliary switch 2 NO + 2 NC	**AA0**	without	**AA0**	without
Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)				
with door sealing frame IP40,	**5AA2**	without	**5AA2**	without
with door sealing frame IP40, sealing cap over OFF button and shutter, size I, up to 1600 A[4]	**5AB2**	**X**	**5AB2**	**X**
with door sealing frame IP40, sealing cap over OFF button and shutter, size II, 2000 ... 3800 A[4]	**5AB2**	**X**	**5AB2**	**X**
with door sealing frame IP40, safety lock device CES instead of OFF button[3] (key removable in OFF position); and shutter, size I, up to 1600 A[4]	**5AF2**	**X**	**5AF2**	**X**
with door sealing frame IP40, safety lock device CES instead of OFF button[3] (key removable in OFF position); and shutter, size II, 2000 ... 3800 A[4]	**5AF2**	**X**	**5AF2**	**X**

1) I_{cw}/500 V 0.5 s for ecoline.

2) Current transformer for overload protection in the neutral conductor and for ground-fault protection must be ordered separately, see page 2/30.

3) This disables mechanical or electrical ON commands.

4) Not available for circuit breakers without guide frame, see also page 2/24.

X = additional price

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3- and 4-pole, fixed-mounted version

Selection and ordering data

Size	Rated current I_n	Short-circuit breaking capacity I_{cu} /500 V	Short-time withstand current, I_{cw}/500 V 1 s [1]	3-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.	4-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.
	A	kA	kA			kg			kg
Horizontal main circuit connection (ecoline)									
I	400	55	50	**3WT80 40-□□□□0-□□□□**		34.000	**3WT80 44-□□□□0-□□□□**		47.000
I	630	55	50	**3WT80 60-□□□□0-□□□□**		34.000	**3WT80 64-□□□□0-□□□□**		47.000
I	800	55	50	**3WT80 80-□□□□0-□□□□**		34.000	**3WT80 84-□□□□0-□□□□**		47.000
I	1000	55	50	**3WT81 00-□□□□0-□□□□**		34.000	**3WT81 04-□□□□0-□□□□**		47.000
I	1250	55	50	**3WT81 20-□□□□0-□□□□**		34.000	**3WT81 24-□□□□0-□□□□**		47.000
Horizontal main circuit connection									
I	400	66	50	**3WT80 41-□□□□0-□□□□**		34.000	**3WT80 45-□□□□0-□□□□**		47.000
I	630	66	50	**3WT80 61-□□□□0-□□□□**		34.000	**3WT80 65-□□□□0-□□□□**		47.000
I	800	66	50	**3WT80 81-□□□□0-□□□□**		34.000	**3WT80 85-□□□□0-□□□□**		47.000
I	1000	66	50	**3WT81 01-□□□□0-□□□□**		34.000	**3WT81 05-□□□□0-□□□□**		47.000
I	1250	66	50	**3WT81 21-□□□□0-□□□□**		34.000	**3WT81 25-□□□□0-□□□□**		47.000
I	1600	66	50	**3WT81 61-□□□□0-□□□□**		36.000	**3WT81 65-□□□□0-□□□□**		49.000
II	2000	66	66	**3WT82 02-□□□□0-□□□□**		57.000	**3WT82 06-□□□□0-□□□□**		70.000
II	2500	66	66	**3WT82 52-□□□□0-□□□□**		57.000	**3WT82 56-□□□□0-□□□□**		70.000
II	3200	66	66	**3WT83 22-□□□□0-□□□□**		61.000	**3WT83 26-□□□□0-□□□□**		74.000
Vertical main circuit connection									
II	4000	66	66	**3WT84 02-□□□□2-□□□□**		92.000	**3WT84 06-□□□□2-□□□□**		106.000

Electronic trip unit (ETU; 8th position of Order No.)	Order No. supplements	Additional price	Order No. supplements	Additional price
ETU35WT: LSI with LCD display	**5**	**X**	**5**	**X**
ETU37WT: LSING [2] with LCD display	**6**	**X**	**6**	**X**
ETU45WT: LSIN [2] with LCD display and additional features	**7**	**X**	**7**	**X**
ETU47WT: LSING [2] with LCD display and additional features	**8**	**X**	**8**	**X**
Operating mechanism, auxiliary release, auxiliary switch (9th to 11th position of Order No., further options see page 2/23)				
Manual operating mechanism, with mechanical closing, without 1st and 2nd auxiliary releases, with auxiliary switch 2 NO + 2 NC	**AA0**	without	**AA0**	without
Motor operated mechanism, with mechanical and electrical closing, motor and closing solenoid 220-240 V AC 50/60 Hz, 220-250 V DC, Shunt release "F" 220-240 V AC 50/60 Hz, 220-250 V DC, without 2nd auxiliary release, with auxiliary switch 2 NO + 2 NC	**UA3**	**X**	**UA3**	**X**
Motor operated mechanism, with mechanical and electrical closing, motor and closing solenoid 220-240 V AC 50/60 Hz, 220-250 V DC, Undervoltage release "r", "F3" 220-240 V AC 50/60 Hz, 220-250 V DC, Shunt release "F" 220-240 V AC 50/60 Hz, 220-250 V DC, with auxiliary switch 2 NO + 2 NC	**UN3**	**X**	**UN3**	**X**
Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)				
with door sealing frame IP40	**0AA2**	without	**0AA2**	without
with door sealing frame IP40, safety lock device CES instead of OFF button [3] (key removable in OFF position)	**0AB2**	**X**	**0AB2**	**X**
with door sealing frame IP40, sealing cap over OFF button and mutual mechanical interlock for 3WT circuit breaker	**0AC2**	**X**	**0AC2**	**X**

X = additional price

[1] I_{cw}/500 V 0.5 s for ecoline.

[2] Current transformer for overload protection in the neutral conductor and for ground-fault protection must be ordered separately, see page 2/30.

[3] This disables mechanical or electrical ON commands.

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Non-automatic air circuit breakers, 3- and 4-pole, withdrawable version

Selection and ordering data

Size	Rated current I_n	Short-circuit breaking capacity I_{cc} /500 V	3-pole Order No. (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.	Basic price	Weight approx.	4-pole Order No. (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.	Basic price	Weight approx.
	A	kA			kg			kg
Withdrawable version, horizontal main circuit connection								
I	800	55	**3WT80 80-4□□□4-□□□□**		58.000	**3WT80 84-4□□□4-□□□□**		76.000
I	1250	55	**3WT81 20-4□□□4-□□□□**		58.000	**3WT81 24-4□□□4-□□□□**		76.000
I	1600	66	**3WT81 61-4□□□4-□□□□**		61.000	**3WT81 65-4□□□4-□□□□**		79.000
II	2000	66	**3WT82 02-4□□□4-□□□□**		94.000	**3WT82 06-4□□□4-□□□□**		118.000
II	2500	66	**3WT82 52-4□□□4-□□□□**		94.000	**3WT82 56-4□□□4-□□□□**		118.000
II	3200	66	**3WT83 22-4□□□4-□□□□**		100.000	**3WT83 26-4□□□4-□□□□**		124.000
Withdrawable version, horizontal main circuit connection at top, vertical connection at bottom[1]								
I	800	55	**3WT80 80-4□□□8-□□□□**		58.000	**3WT80 84-4□□□8-□□□□**		76.000
I	1250	55	**3WT81 20-4□□□8-□□□□**		58.000	**3WT81 24-4□□□8-□□□□**		76.000
I	1600	66	**3WT81 61-4□□□8-□□□□**		61.000	**3WT81 65-4□□□8-□□□□**		79.000
II	2000	66	**3WT82 02-4□□□8-□□□□**		94.000	**3WT82 06-4□□□8-□□□□**		118.000
II	2500	66	**3WT82 52-4□□□8-□□□□**		94.000	**3WT82 56-4□□□8-□□□□**		118.000
II	3200	66	**3WT83 22-4□□□8-□□□□**		100.000	**3WT83 26-4□□□8-□□□□**		124.000
Withdrawable version, vertical connection at top and bottom								
I	800	55	**3WT80 80-4□□□6-□□□□**		58.000	**3WT80 84-4□□□6-□□□□**		76.000
I	1250	55	**3WT81 20-4□□□6-□□□□**		58.000	**3WT81 24-4□□□6-□□□□**		76.000
I	1600	66	**3WT81 61-4□□□6-□□□□**		61.000	**3WT81 65-4□□□6-□□□□**		79.000
II	2000	66	**3WT82 02-4□□□6-□□□□**		94.000	**3WT82 06-4□□□6-□□□□**		118.000
II	2500	66	**3WT82 52-4□□□6-□□□□**		94.000	**3WT82 56-4□□□6-□□□□**		118.000
II	3200	66	**3WT83 22-4□□□6-□□□□**		100.000	**3WT83 26-4□□□6-□□□□**		124.000
II	3800	66	**3WT84 02-4□□□6-□□□□**		118.000	**3WT84 06-4□□□6-□□□□**		141.000
Withdrawable version without guide frame (guide frame see page 2/30)								
I	800	55	**3WT80 80-4□□□3-□□□□**		36.000	**3WT80 84-4□□□3-□□□□**		49.000
I	1250	55	**3WT81 20-4□□□3-□□□□**		36.000	**3WT81 24-4□□□3-□□□□**		49.000
I	1600	66	**3WT81 61-4□□□3-□□□□**		38.000	**3WT81 65-4□□□3-□□□□**		51.000
II	2000	66	**3WT82 02-4□□□3-□□□□**		59.000	**3WT82 06-4□□□3-□□□□**		72.000
II	2500	66	**3WT82 52-4□□□3-□□□□**		59.000	**3WT82 56-4□□□3-□□□□**		72.000
II	3200	66	**3WT83 22-4□□□3-□□□□**		63.000	**3WT83 26-4□□□3-□□□□**		76.000
II	3800	66	**3WT84 02-4□□□3-□□□□**		64.000	**3WT84 06-4□□□3-□□□□**		77.000

Operating mechanism, auxiliary release, auxiliary switch (9th to 11th position of Order No., further options see page 2/23)	Order No. supplements		Additional price	Order No. supplements		Additional price
Manual operating mechanism, with mechanical closing, without 1st and 2nd auxiliary releases, with auxiliary switch 2 NO + 2 NC	**AA0**		without	**AA0**		without
Motor operated mechanism, with mechanical and electrical closing, motor and closing solenoid 220-240 V AC 50/60 Hz, 220-250 V DC, Shunt release "F" 220-240 V AC 50/60 Hz, 220-250 V DC, without 2nd auxiliary release, with auxiliary switch 2 NO + 2 NC	**UA3**		**X**	**UA3**		**X**
Fixed-mounted version Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)						
with door sealing frame IP40		**0AA2**	without		**0AA2**	without
Withdrawable version Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)						
with door sealing frame IP40		**5AA2**	without		**5AA2**	without
with door sealing frame IP40, and shutter, sealing cap over OFF button, size I, up to 1600 A		**5AB2**	**X**		**5AB2**	**X**
size II, 2000 ... 3800 A			**X**			**X**

"Options" and "Accessories" see "Options" and "Accessories" for "Air-Circuit Breakers", pages 2/23 to 2/34.

[1] Can be converted to vertical at top and horizontal main connection at bottom.

X = additional price

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Non-automatic air circuit breakers, 3- and 4-pole, fixed-mounted version

Size	Rated current I_n	Short-circuit breaking capacity I_{cc} /500 V	3-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.	4-pole Order No. (Order No. supplement (8th to 11th and 13th to 16th position of Order No.) must be added. For quick selection see below. Further options see pages 2/23 to 2/29.)	Basic price	Weight approx.
	A	kA			kg			kg
Fixed-mounted version, horizontal main circuit connection								
I	800	55	**3WT80 80-4□□□0-□□□□**		34.000	**3WT80 84-4□□□0-□□□□**		47.000
I	1250	55	**3WT81 20-4□□□0-□□□□**		34.000	**3WT81 24-4□□□0-□□□□**		47.000
I	1600	66	**3WT81 61-4□□□0-□□□□**		36.000	**3WT81 65-4□□□0-□□□□**		49.000
II	2000	66	**3WT82 02-4□□□0-□□□□**		57.000	**3WT82 06-4□□□0-□□□□**		70.000
II	2500	66	**3WT82 52-4□□□0-□□□□**		57.000	**3WT82 56-4□□□0-□□□□**		70.000
II	3200	66	**3WT83 22-4□□□0-□□□□**		61.000	**3WT83 26-4□□□0-□□□□**		74.000
Fixed-mounted version, vertical main circuit connection								
II	4000	66	**3WT84 02-4□□□2-□□□□**		92.000	**3WT84 06-4□□□2-□□□□**		106.000

Operating mechanism, auxiliary release, auxiliary switch (9th to 11th position of Order No., further options see page 2/23)	Order No. supplements		Additional price	Order No. supplements		Additional price
Manual operating mechanism, with mechanical closing, without 1st and 2nd auxiliary releases, with auxiliary switch 2 NO + 2 NC	**AA0**		without	**AA0**		without
Motor operated mechanism, with mechanical and electrical closing, motor and closing solenoid 220-240 V AC 50/60 Hz, 220-250 V DC, Shunt release "F" 220-240 V AC 50/60 Hz, 220-250 V DC, without 2nd auxiliary release, with auxiliary switch 2 NO + 2 NC	**UA3**		**X**	**UA3**		**X**
Fixed-mounted version Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)						
with door sealing frame IP40		**0AA2**	without		**0AA2**	without
Withdrawable version Accessories (13th to 16th position of Order No., further options see pages 2/24 to 2/29)						
with door sealing frame IP40		**5AA2**	without		**5AA2**	without
with door sealing frame IP40, sealing cap over OFF button, and shutter size I, up to 1600 A		**5AB2**	**X**		**5AB2**	**X**
size II, 2000 ... 3800 A			**X**			**X**

"Options" and "Accessories" see "Options" and "Accessories" for "Air-Circuit Breakers", pages 2/23 to 2/34.

X = additional price

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Selection and ordering data

Design				Order No. supplement 9th to 11th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. □□□ .-. . . .	Additional price
Operating mechanism					
Manual operating mechanism, with mechanical closing				A	without
Manual operating mechanism, with mechanical and electrical closing					
Closing solenoid					
AC 50/60 Hz V	DC V				
--	24			B	X
110 ... 127	110 ... 125			E	X
220 ... 240	220 ... 250			F	X
Manual/motorized operating mechanism, with mechanical and electrical closing					
Motor		Closing solenoid			
AC 50/60 Hz V	DC V	AC 50/60 Hz V	DC V		
--	24	24	24	G	X
110 ... 127	110 ... 125	110 ... 127	110 ... 125	K	X
220 ... 240	220 ... 250	220 ... 240	220 ... 250	U	X
110 ... 127	110 ... 125	--	24	L	X
220 ... 240	220 ... 250	--	24	Q	X
220 ... 240	220 ... 250	110 ... 127	110 ... 125	T	X
1st auxiliary release					
Without 1st auxiliary release				A	without
Shunt release "f" F1					
AC 50/60 Hz V	DC V				
--	24			B	X
110 ... 127	110 ... 125			F	X
220 ... 240	220 ... 250			G	X
Undervoltage release "r" F3					
AC 50/60 Hz V	DC V				
--	24			H	X
110 ... 127	110 ... 125			M	X
220 ... 240	220 ... 250			N	X
380 ... 415	--			P	X
Undervoltage release "rc" F8, can be delayed between 0.2 and 3.2 s					
AC 50/60 Hz V	DC V				
110 ... 127	110 ... 125			U	X
220 ... 240	220 ... 250			V	X
380 ... 415	--			W	X
2nd auxiliary release and auxiliary switch					
Without 2nd auxiliary release		**with 1st auxiliary contact block (standard)** 2 NO + 2 NC		0	without
Shunt release "f" F2		**with 1st auxiliary contact block (standard)**			
AC 50/60 Hz V	DC V				
--	24	2 NO + 2 NC		1	X
110 ... 127	110 ... 125	2 NO + 2 NC		2	X
220 ... 240	220 ... 250	2 NO + 2 NC		3	X
Without 2nd auxiliary release		**with 1st and 2nd auxiliary contact block** 2 NO + 2 NC + 2 CO		4	X
Shunt release "f" F2		**with 1st and 2nd auxiliary contact block**			
AC 50/60 Hz V	DC V				
--	24	2 NO + 2 NC + 2 CO		5	X
110 ... 127	110 ... 125	2 NO + 2 NC + 2 CO		6	X
220 ... 240	220 ... 250	2 NO + 2 NC + 2 CO		7	X

X = additional price

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Options

Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□	Additional price 3-pole	 4-pole
For withdrawable circuit breakers without guide frame			
With door sealing frame IP40	**5 A A 2**	without	without
With door sealing frame IP40 and locking device With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**5 A E 2**	**X**	**X**
For withdrawable circuit breakers with guide frame			
With door sealing frame IP40	**5 A A 2**	without	without
With door sealing frame IP40, sealing cap over OFF button, and shutter Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**5 A B 2**		
 With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		 **X** **X**	 **X** **X**
With door sealing frame IP40, sealing cap over OFF button, and mutual mechanical interlock for 3WT circuit breaker Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**5 A C 2**		
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, sealing cap over OFF button, mutual mechanical interlock for 3WT circuit breaker and shutter Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**5 A D 2**		
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.			
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		 **X** **X**	 **X** **X**
With door sealing frame IP40 and locking device With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**5 A E 2**	**X**	**X**
With door sealing frame IP40, locking device, and shutter With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**5 A F 2**		
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		 **X** **X**	 **X** **X**
With door sealing frame IP40 locking device, blocking device and mutual mechanical interlock for 3WT circuit breaker With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**5 A G 2**		
Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40 locking device, blocking device, mutual mechanical interlock for 3WT circuit breaker and shutter With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**5 A H 2**		
Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.			
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		 **X** **X**	 **X** **X**

[1] This disables mechanical or electrical ON commands.

X = additional price

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Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□	Additional price 3-pole	 4-pole
For withdrawable circuit breakers with guide frame			
With door sealing frame IP40 locking device and sealing cap over OFF button Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**5 A J 2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock		**X**	**X**
With door sealing frame IP40 locking device, sealing cap over OFF button, and shutter Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**5 A K 2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock			
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		**X** **X**	**X** **X**
With door sealing frame IP40 locking device, blocking device, sealing cap over OFF button and mutual mechanical interlock for 3WT circuit breaker Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**5 A L 2**		
Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position			
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40 locking device, blocking device, sealing cap over OFF button, mutual mechanical interlock for 3WT circuit breaker and shutter Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**5 A M 2**		
Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position			
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.			
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		**X** **X**	**X** **X**
With door sealing frame IP40, sealing cap over OFF button, 5-digit operating cycles counter and shutter Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**5 A P 2**		
With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A		**X** **X**	**X** **X**
With door sealing frame IP40 blocking device, sealing cap over OFF button, 5-digit operating cycles counter and mutual mechanical interlock for 3WT circuit breaker Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position	**5 A Q 2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**

[1] Locks are available at the manufacturer of the locks.

X = additional price

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Options

Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□	Additional price 3-pole	 4-pole
For withdrawable circuit breakers with guide frame			
 With door sealing frame IP40 **blocking device,** **sealing cap over OFF button,** **5-digit operating cycles counter** **mutual mechanical interlock for 3WT circuit breaker,** **and shutter** Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position Sealing cap to prevent unauthorized opening, cannot be combined with safety lock Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31. With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A	**5 A R 2**	 **X** **X**	 **X** **X**
With door sealing frame IP40 **locking device,** **sealing cap over OFF button** **and 5-digit operating cycles counter** Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**5 A S 2**	 **X**	 **X**
With door sealing frame IP40 **locking device,** **sealing cap over OFF button,** **5-digit operating cycles counter** **and shutter** Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Sealing cap to prevent unauthorized opening, cannot be combined with safety lock With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A	**5 A T 2**	 **X** **X**	 **X** **X**
With door sealing frame IP40 **locking device,** **blocking device,** **sealing cap over OFF button,** **5-digit operating cycles counter** **and mutual mechanical interlock for 3WT circuit breaker** Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position Sealing cap to prevent unauthorized opening, cannot be combined with safety lock Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.	**5 A U 2**	 **X**	 **X**
With door sealing frame IP40 **locking device,** **blocking device,** **sealing cap over OFF button,** **5-digit operating cycles counter** **mutual mechanical interlock for 3WT circuit breaker** **and shutter** Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Blocking device to prevent opening of the cabinet door when the circuit breaker is in connected position Sealing cap to prevent unauthorized opening, cannot be combined with safety lock Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31. With shutter Size I, up to 1600 A Size II, 2000 ... 3800 A	**5 A V 2**	 **X** **X**	 **X** **X**

[1] Locks are available at the manufacturer of the locks.

X = additional price

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Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□					Additional price 3-pole	 4-pole
For withdrawable circuit breakers with guide frame							
With door interlock		**5**	**A**	**W**	**2**	**X**	**X**
With door interlock and shutter		**5**	**A**	**X**	**2**		
With shutter							
Size I, up to 1600 A						**X**	**X**
Size II, 2000 ... 3800 A						**X**	**X**
With door interlock, locking device, sealing cap over OFF button, position indicator switch and shutter Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)		**5**	**A**	**Y**	**2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock							
With shutter							
Size I, up to 1600 A						**X**	**X**
Size II, 2000 ... 3800 A						**X**	**X**
With door interlock, sealing cap over OFF button, position indicator switch, 5-digit operating cycles counter and shutter		**5**	**B**	**A**	**2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock							
With shutter							
Size I, up to 1600 A						**X**	**X**
Size II, 2000 ... 3800 A						**X**	**X**
With door interlock, locking device, sealing cap over OFF button, position indicator switch, 5-digit operating cycles counter and shutter Locking device: mounting set for CASTELL lock[1], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)		**5**	**B**	**B**	**2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock							
With shutter							
Size I, up to 1600 A						**X**	**X**
Size II, 2000 ... 3800 A						**X**	**X**
With door interlock, sealing cap over OFF button, position indicator switch and shutter		**5**	**B**	**C**	**2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock							
With shutter							
Size I, up to 1600 A						**X**	**X**
Size II, 2000 ... 3800 A						**X**	**X**

[1] Locks are available at the manufacturer of the locks.

X = additional price

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Options

Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□	Additional price 3-pole	 4-pole
For fixed-mounted circuit breakers			
With door sealing frame IP40	**0 A A 2**	without	without
With door sealing frame IP40 and locking device With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**0 A B 2**	**X**	**X**
With door sealing frame IP40, sealing cap over OFF button and mutual mechanical interlock for 3WT circuit breaker, sealing cap to prevent unautorized opening, cannot be combined with safety lock	**0 A C 2**		
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, locking device, and mutual mechanical interlock for 3WT circuit breaker With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**0 A D 2**		
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, sealing cap over OFF button, blocking device, and mutual mechanical interlock for 3WT circuit breaker Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**0 A E 2**		
Blocking device to prevent opening of the cabinet door with the circuit breaker closed			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, locking device, blocking device, and mutual mechanical interlock for 3WT circuit breaker With safety lock device CES instead of OFF button[1] (key removable in OFF position)	**0 A F 2**		
Blocking device to prevent opening of the cabinet door with the circuit breaker closed			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, locking device, and sealing cap over OFF button Locking device: mounting set for CASTELL lock[2], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**0 A G 2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock		**X**	**X**
With door sealing frame IP40, 5-digit operating cycles counter, locking device, sealing cap over OFF button, blocking device, and mutual mechanical interlock for 3WT circuit breaker Locking device: mounting set for CASTELL lock[2], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)	**0 A H 2**		
Sealing cap to prevent unauthorized opening, cannot be combined with safety lock			
Blocking device to prevent opening of the cabinet door with the circuit breaker closed			
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**
With door sealing frame IP40, 5-digit operating cycles counter, sealing cap over OFF button, and mutual mechanical interlock for 3WT circuit breaker Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**0 A J 2**		
Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.		**X**	**X**

[1] This disables mechanical or electrical ON commands.

[2] Locks are available at the manufacturer of the locks.

X = additional price

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Design	Order No. supplement 13th to 16th position of Order No. of circuit breaker (see pages 2/18 to 2/22) must be added as listed below 3WT8. . .-. . . . .-□□□□	Additional price 3-pole	 4-pole
For fixed-mounted circuit breakers			
With door sealing frame IP40, 5-digit operating cycles counter, sealing cap over OFF button, blocking device, and mutual mechanical interlock for 3WT circuit breaker Sealing cap to prevent unauthorized opening, cannot be combined with safety lock Blocking device to prevent opening of the cabinet door with the circuit breaker closed Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.	**0 A K 2**	**X**	**X**
With door sealing frame IP40, 5-digit operating cycles counter, locking device, and sealing cap over OFF button Locking device: mounting set for CASTELL lock[2], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Sealing cap to prevent unauthorized opening, cannot be combined with safety lock	**0 A L 2**	**X**	**X**
With door sealing frame IP40, 5-digit operating cycles counter, locking device, sealing cap over OFF button, blocking device, and mutual mechanical interlock for 3WT circuit breaker With safety lock device CES instead of OFF button[1] (key removable in OFF position) Locking device: mounting set for CASTELL lock[2], Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2) Blocking device to prevent opening of the cabinet door with the circuit breaker closed Interlock module with a Bowden wire (2 m); when interlocking three circuit breakers an additional Bowden wire is required, see page 2/31.	**0 A M 2**	**X**	**X**
With 5-digit operating cycles counter	**0 A N 2**	**X**	**X**
With door interlock	**0 A P 2**	**X**	**X**

[1] This disables mechanical or electrical ON commands.

[2] Locks are available at the manufacturer of the locks.

X = additional price

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Accessories/spare parts

Selection and ordering data

Size	Rated current I_n	3-pole Order No.	Price	Weight approx.	4-pole Order No.	Price	Weight approx.
	A			kg			kg
Guide frame for withdrawable version, horizontal main circuit connection, 2 auxiliary supply connectors							
I	400 … 1250	**3WT98 83-2AC10**		22	**3WT98 83-2AC30**		27
I	1600	**3WT98 83-4AC10**		23	**3WT98 83-4AC30**		28
II	2000 ... 2500	**3WT98 83-6AC10**		35	**3WT98 83-6AC30**		46
II	3200	**3WT98 83-7AC10**		37	**3WT98 83-7AC30**		48
Guide frame for withdrawable version, horizontal main circuit connection at top, vertical connection at bottom, 2 auxiliary supply connectors							
I	400 … 1250	**3WT98 83-2BC10**		22	**3WT98 83-2BC30**		27
I	1600	**3WT98 83-4BC10**		23	**3WT98 83-4BC30**		28
II	2000 ... 2500	**3WT98 83-6BC10**		35	**3WT98 83-6BC30**		46
II	3200	**3WT98 83-7BC10**		37	**3WT98 83-7BC30**		48
Guide frame for withdrawable version, vertical main circuit connection at top and bottom, 2 auxiliary supply connectors							
I	400 … 1250	**3WT98 83-2BC20**		22	**3WT98 83-2BC40**		27
I	1600	**3WT98 83-4BC20**		23	**3WT98 83-4BC40**		28
II	2000 ... 2500	**3WT98 83-6BC20**		35	**3WT98 83-6BC40**		46
II	3200	**3WT98 83-7BC20**		37	**3WT98 83-7BC40**		48
II	3800	**3WT98 83-8BC20**		64	**3WT98 83-8BC40**		64

For fixed-mounted and withdrawable circuit breakers

Current transformers for neutral conductor overload protection and ground-fault protection
Only one of the two measuring methods is permissible in conjunction with the electronic trip unit. The overload protection for the neutral conductor takes effect when the current transformer is fitted in the neutral conductor. The ground-fault current is calculated by means of summation current formation of the phases and the neutral conductor.

Type of detection (see page 2/7) Designation	Frame size of the circuit breaker	Required order quantity per circuit breaker	For 1 set or 1 unit Order No.	Price	Weight approx.
					kg
Vectorial summation with current transformer in the neutral conductor					
Current transformers for 3- and 4-pole circuit breakers, external neutral conductor with copper busbars	I	1 unit	**3WL9 111-0AA31-0AA0**		1.600
	II	1 unit	**3WL9 111-0AA32-0AA0**		4.260
Current transformers for 3- and 4-pole circuit breakers, external neutral conductor without copper busbars	I	1 unit	**3WL9 111-0AA21-0AA0**		0.300
	II	1 unit	**3WL9 111-0AA22-0AA0**		0.380
Designation	Rated control supply voltage/ rated operational voltage	Order quantity	For 1 set or 1 unit		
	AC 50/60 Hz				
Manual function tester for electronic trip unit for versions ETU35WT ... ETU47WT	110 ... 127/220 ... 240 V	1 unit	**3WL9 111-0AT32-0AA0**		1.300
Door sealing frame IP40		1 unit	**3WT98 86-0JA00**		1.000
Protective covers, IP55 Cannot be used in conjunction with door sealing frames, cover removable and can be opened on both sides		1 unit	**3WL9 111-0AP02-0AA0**		1.600

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When retrofitting, the circuit breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit breaker in accordance with the installation instructions.

Designation				Required order quantity per circuit breaker	For 1 set or 1 unit Order No.	Price	Weight approx. kg
For fixed-mounted and withdrawable circuit breakers							
00035 **5-digit operating cycles counter**				1 unit	**3WT98 64-0CA00**		0.250
Auxiliary release	Rated control supply voltage						
	AC 50/60 Hz V	DC V					
Shunt release "f" for 1st and 2nd auxiliary release (F1 and F2) and closing solenoid (Y1)	--	24		1 unit	**3WT98 51-1JB00**		0.800
	110 ... 127	110 ... 125			**3WT98 51-1JH00**		0.800
	220 ... 240	220 ... 250			**3WT98 51-1JK00**		0.800
Undervoltage release "r" (F3) instantaneous 0 ms, short-delay 200 ms	--	24		1 unit	**3WT98 53-1JB00**		0.800
	110 ... 127	110 ... 125			**3WT98 53-1JH00**		0.800
	220 ... 240	220 ... 250			**3WT98 53-1JK00**		0.800
	380 ... 415	--			**3WT98 53-1JM00**		0.800
Undervoltage release "rc" (F8) can be delayed 0.2 ... 3.2 s	110 ... 127	110 ... 125		1 unit	**3WT98 54-1JH00**		0.850
	220 ... 240	220 ... 250			**3WT98 54-1JK00**		0.850
	380 ... 415	--			**3WT98 54-1JM00**		0.850
Auxiliary switches 2 CO				1 unit	**3WT98 16-1CE00**		0.070
Motorized operating mechanism and electrical closing (possible if 9th position of Order No. for circuit breaker is "A")	consisting of motor and closing solenoid (Y1)						
	Rated control supply voltage						
	Motor		Closing solenoid				
	AC 50/60 Hz V	DC V	AC 50/60 Hz V	DC V			
	110 ... 127 220 ... 240	110 ... 125 220 ... 250	110 ... 127 220 ... 240	110 ... 125 220 ... 250	1 set	**3WT98 31-1JH00** **3WT98 31-1JK00**	2.400 2.400
Motorized operating mechanism	consisting of motor and wiring; rated control supply voltage of motor						
	AC 50/60 Hz V		DC V				
	--		24		1 set	**3WT98 32-1JB00**	1.600
	110 ... 127		110 ... 125		1 set	**3WT98 32-1JH00**	1.600
	220 ... 240		220 ... 250		1 set	**3WT98 32-1JK00**	1.600
Electrical closing (possible if 9th position of Order No. for circuit breaker is "A"	consisting of closing solenoid (Y1), electrical ON button and wiring; rated control supply voltage of closing solenoid (Y1)						
	AC 50/60 Hz V		DC V				
	--		24		1 set	**3WT98 33-1JB00**	0.800
	110 ... 127		110 ... 125		1 set	**3WT98 33-1JH00**	0.800
	220 ... 240		220 ... 250		1 set	**3WT98 33-1JK00**	0.800
Mutual mechanical interlock for 3WT circuit breaker	An interlock module with a Bowden wire (2 m) for one fixed-mounted circuit breaker			1 unit	**3WT98 66-3JA00**		3.000
	for one withdrawable circuit breaker			1 unit	**3WT98 66-4JA00**		1.000
	Interlocking of three circuit breakers additional Bowden wire required for each circuit breaker Bowden wire (2 m)			1 unit	**3WT98 66-8JA00**		0.200
	Bowden wire (3 m) Bowden wire (4.5 m)			1 unit	**3WT98 66-8JA01** **3WT98 66-8JA02**		0.500 0.700
Locking device consisting of safety locks or padlocks to prevent unauthorized closing of the circuit-breaker	Safety lock (3SB1) instead of the OFF button	Made by CES Normal lock no. SSG 10		1 unit	**3WT98 63-1JA00**		0.120
	Mounting set[1] for CASTELL or FORTRESS lock[2]			1 set	**3WT98 63-6JE00**		0.100
	Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2) or FORTRESS lock (H31LH/65°/standard)						

[1] The 3WT98 63–6JE locking system meets the isolation conditions to IEC 60947-1 and IEC 60947-1/A1.

[2] Locks are available at the manufacturer of the locks.

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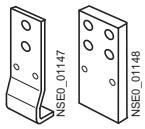
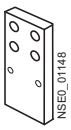
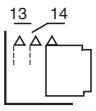
Accessories/spare parts

When retrofitting, the circuit breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit breaker in accordance with the installation instructions.

Designation/ for circuit breaker Type	Rated current I_n	Size	Number of poles	Required order quantity per circuit breaker	For 1 set or 1 unit Order No.	Price	Weight approx. kg
For fixed-mounted and withdrawable circuit breakers							
Crank handle							
For withdrawable circuit breaker				1 set	**3WT98 84-0JA00**		0.500
Electronic trip unit							
ETU35WT, LSI with display				1 unit	**3WT98 41-4AA00**		1.200
ETU37WT, LSING with display				1 unit	**3WT98 41-5AB00**		1.200
ETU45WT, LSIN with display				1 unit	**3WT98 41-6AC00**		1.200
ETU47WT, LSING with display				1 unit	**3WT98 41-7AD00**		1.200
For fixed-mounted circuit breakers							
Connecting bars for vertical connection	up to 1250 A	I	3-pole and 4-pole	1 unit[3]	**3WT98 21-7AC00**		2.000
	1600 A	I	3-pole and 4-pole	1 unit[3]	**3WT98 21-7BC00**		4.100
	2000 A and 2500 A	II	3-pole	1 set[1]	**3WT98 21-7DA00**		5.500
			4-pole	1 set[2]	**3WT98 21-7DB00**		7.400
	3200 A	II	3-pole	1 set[1]	**3WT98 21-7FA00**		4.800
			4-pole	1 set[2]	**3WT98 21-7FB00**		6.500
 **Connecting bars for front-accessible connection** Vertical double-hole bar (holes to DIN 43673)	up to 1250 A	I	3- and 4-pole	1 unit[3]	**3WT98 21-1AA01**		on req.
	1600 A	I	3- and 4-pole	1 unit[3]	**3WT98 21-1BA01**		on req.
	2000 A and 2500 A	II	3- and 4-pole	1 unit[3]	**3WT98 21-1DA01**		on req.
	3200 A	II	3- and 4-pole	1 unit[3]	**3WT98 21-1FA01**		on req.
Auxiliary supply connectors				1 unit	**3WT98 25-1JC00**		0.080
Blocking device	to prevent opening of the cabinet door with the fixed-mounted circuit breaker closed			1 unit	**3WT98 67-2JA00**		0.700
Conversion set from fixed-mounted to withdrawable version = single operating mechanism	up to 1600 A	I	3-pole	1 unit	**3WT98 88-0GA00**		on req.
	up to 1600 A	I	4-pole	1 unit	**3WT98 88-0HA00**		on req.
	up to 3200 A	II	3-pole	1 unit	**3WT98 88-0KA00**		on req.
	up to 3200 A	II	4-pole	1 unit	**3WT98 88-0LA00**		on req.
For guide frames							
 **Connecting bar for additional terminal accessible from the front** Vertical double-hole bar (holes to DIN 43673)	up to 1250 A	I	3- and 4-pole	1 unit[3]	**3WT98 23-1AA01**		on req.
	1600 A	I	3- and 4-pole	1 unit[3]	**3WT98 23-1BA01**		on req.
	2000 A and 2500 A	II	3- and 4-pole	1 unit[3]	**3WT98 23-1DA01**		on req.
	3200 A	II	3- and 4-pole	1 unit[3]	**3WT98 23-1EA01**		on req.
Connecting bar for rear vertical connection	up to 1250 A	I	3- and 4-pole	1 unit[3]	**3WT98 23-3AA00**		on req.
	1600 A	I	3- and 4-pole	1 unit[3]	**3WT98 23-3BA00**		on req.
	2000 A and 2500 A	II	3-pole	1 set[1]	**3WT98 23-4AB00**		2.600
			4-pole	1 set[2]	**3WT98 23-4AC00**		3.500
	3200 A	II	3-pole	1 set[1]	**3WT98 23-4BB00**		5.400
			4-pole	1 set[2]	**3WT98 23-4BC00**		7.100

Position indicator switch (actuated by withdrawable circuit breaker)	Connected position	Test position	Disconnected position	Precondition			
	3 NO + 3 NC	2 NO + 2 NC	1 NO + 1 NC	possible if no pos. switch mounted yet	1 set = 1 unit	**3WT98 84-1JC10**	0.300

1) 1 set = 3 units.

2) 1 set = 4 units.

3) Please order the number of connecting bars as required for the application.

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When retrofitting, the circuit breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit breaker in accordance with the installation instructions.

Designation/ for circuit breaker Type	Rated current I_n	Size	Numbers of poles	Required order quantity per circuit breaker	For 1 set or 1 unit Order No.	Price	Weight approx.
							kg
For guide frames (continued)							
Shutters Protection against touching the main contacts	1600 A	size I	3-pole	1 unit	**3WT98 84-3CA00**		0.500
	2000 A ... 3800 A	size II		1 unit	**3WT98 84-3DA00**		0.700
	1600 A	size I	4-pole	1 unit	**3WT98 84-3CB00**		0.600
	2000 A ... 3800 A	size II		1 unit	**3WT98 84-3DB00**		0.800
Auxiliary supply connectors For guide frames – for spare parts and retrofitting	up to 4000 A	size I, II	3- and 4-pole	1 unit	**3WT98 27-1JA00**		0.160
For withdrawable circuit breakers							
Blocking device to prevent opening of the cabinet door, when circuit breaker is in connected position	up to 4000 A	size I, II	3- and 4-pole	1 unit	**3WT98 67-1JC00**		0.100
For fixed-mounted and withdrawable circuit breakers							
Main contact set	up to 1250 A, Ecoline	size I	3-pole	3 units	**3WT98 21-0AA00**		on req.
			4-pole	4 units	**3WT98 21-0AA00**		on req.
	up to 1250 A, I_{cw} = 50 kA	size I	3-pole	3 units	**3WT98 21-0AA10**		on req.
			4-pole	4 units	**3WT98 21-0AA10**		on req.
	up to 1600 A	size I	3-pole	3 units	**3WT98 21-0BA00**		on req.
			4-pole	4 units	**3WT98 21-0BA00**		on req.
	up to 2500 A	size II	3-pole	3 units	**3WT98 21-0DA00**		on req.
			4-pole	4 units	**3WT98 21-0DA00**		on req.
for fixed-mounted circuit breakers only	up to 4000 A	size II	3-pole	3 units	**3WT98 21-0FA00**		on req.
			4-pole	4 units	**3WT98 21-0FA00**		on req.
for withdrawable circuit breakers and for fixed-mounted circuit breakers	up to 3200 A 4000 A	size II	3-pole	3 units	**3WT98 21-0FA00**		on req.
			4-pole	4 units	**3WT98 21-0FA00**		on req.
for withdrawable circuit breakers only	3800 A	size II	3-pole	3 units	**3WT98 21-0GA00**		on req.
			4-pole	4 units	**3WT98 21-0GA00**		on req.
Arc chute	up to 1600 A	size I	3-pole	3 units	**3WT98 11-0CA00**		on req.
			4-pole	4 units	**3WT98 11-0CA00**		on req.
	2000 A ... 4000 A	size II	3-pole	3 units	**3WT98 11-0FA00**		on req.
			4-pole	4 units	**3WT98 11-0FA00**		on req.
Installation manual for 3WT8							
Chinese language					**3ZX18 12-0WT81-0AN0**		
English language					**3ZX18 12-0WT82-0AN0**		
Spanish language					**3ZX18 12-0WT83-0AN0**		
Portuguese language					**3ZX18 12-0WT84-0AN0**		
German language					**3ZX18 12-0WT85-0AN0**		
Russian language					**3ZX18 12-0WT86-0AN0**		
Turkish language					**3ZX18 12-0WT87-0AN0**		

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Project planning aids

Characteristic curves[2)]

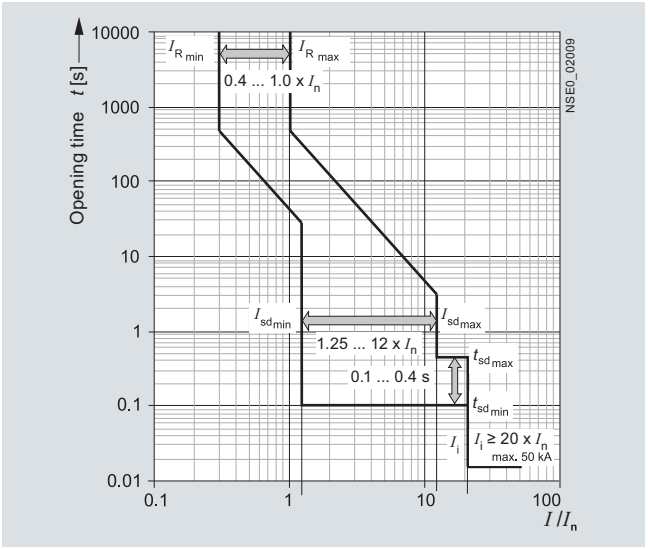
Every electronic trip unit type and every setting has its own characteristic. Only a selection is shown in the following. The characteristic curves each show the largest and smallest setting range of 3WT8 circuit breakers with 1000 A rated current at 500 V rated voltage with various trip units.

In order to obtain a complete tripping characteristic, the relevant parts of the characteristic have to be combined.

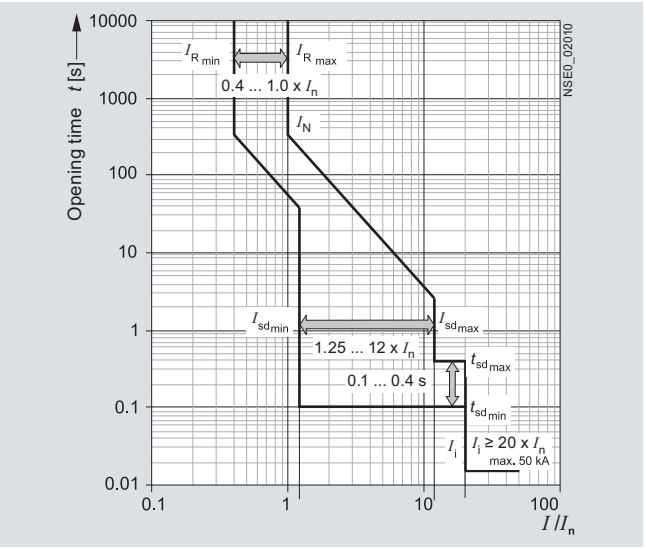
The characteristic curves show the behavior of the electronic trip unit when it is activated by a current that is already flowing before the tripping operation. If the overcurrent tripping occurs immediately after switch on and the electronic trip unit is therefore not yet enabled, the opening time is extended, depending on the level of the overcurrent by up to 15 ms. In order to determine the break-times of the circuit breakers, approximately 15 ms must be added to the opening times shown for the arcing time.

Refer to the following legend for tolerances.

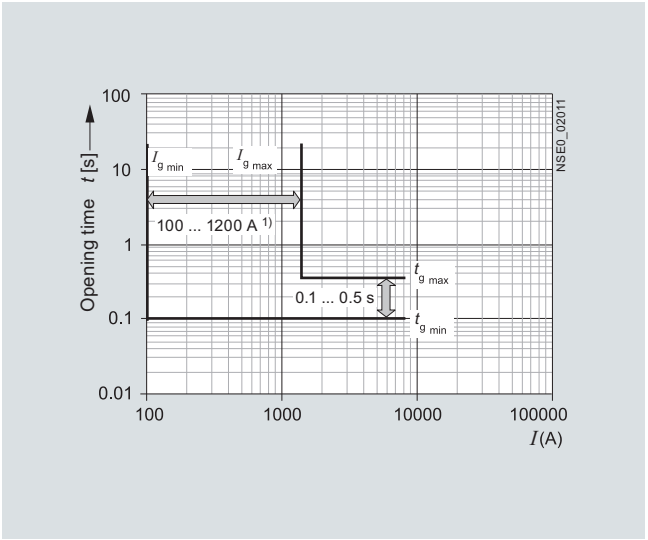
The characteristic curves shown apply to ambient temperatures at the circuit breaker between -5 and +55 °C. The trip unit can be operated at ambient temperatures of -20 to + 70 °C. An extended tolerance band can apply at these temperatures.



3WT8 circuit breaker with ETU35WT electronic trip unit, LSI characteristic curve



3WT8 circuit breaker with ETU37WT electronic trip unit, LSIN characteristic curve



3WT8 circuit breaker with ETU37WT electronic trip unit, G characteristic curve[3)]

Tolerances for the set currents
L: Tripping operations between 1.05 and 1.2 x I_R
S: –0 %, +20 %
I: –0 %, +20 %
G: –0 %, +20 %

Tolerances for the tripping times
L: –20 %, +0 % for I^2t characteristic curve
S: –0 %, +60 ms or -0 %, 10 % for characteristic curve with fixed delay time
I: <50 ms
G: –0 %, +60 ms or -0 %, 10 % for characteristic curve with fixed delay time

1) Sizes I and II: 100 ... 1200 A.

2) With single-pole loading in the lowest rated current range, the response times of the short-circuit release can be extended by approx. 10 % and the tripping times by approx. 15 % compared to the characteristic curve.

3) As a result of the activation level of 150 A (frame size I) and 200 A (frame size II) in case of a single-pole loading the minimum pick-up value of ground fault will be I_g = 300 A.

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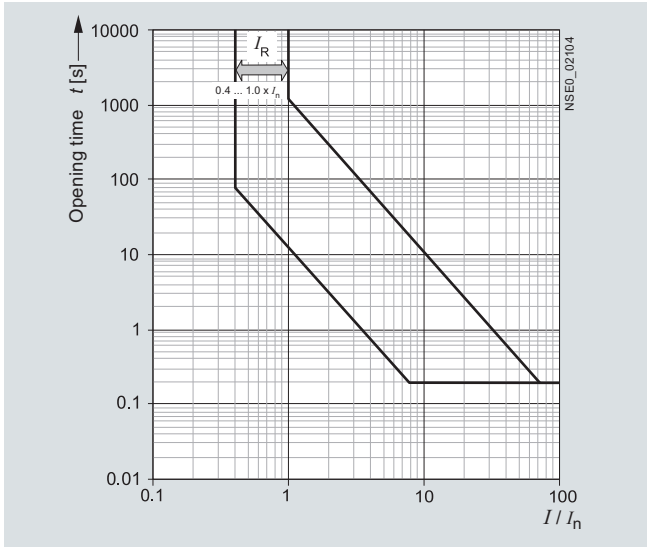
Every electronic trip unit type and every setting has its own characteristic. Only a selection is shown in the following. The characteristic curves each show the largest and smallest setting range of 3WT8 circuit breakers with 1000 A rated current at 500 V rated voltage with various trip units.

In order to obtain a complete tripping characteristic, the relevant parts of the characteristic have to be combined.

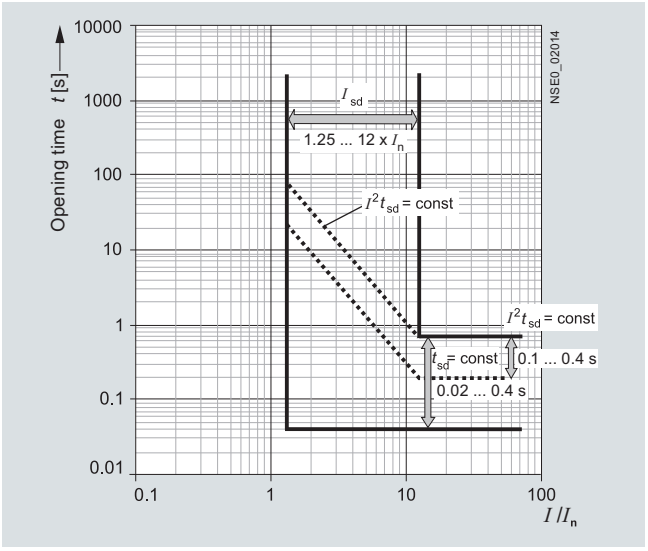
The characteristic curves show the behavior of the electronic trip unit when it is activated by a current that is already flowing before the tripping operation. If the overcurrent tripping occurs immediately after switch on and the electronic trip unit is therefore not yet enabled, the opening time is extended, depending on the level of the overcurrent by up to 15 ms. In order to determine the break-times of the circuit breakers, approximately 15 ms must be added to the opening times shown for the arcing time.

Refer to the following legend for tolerances.

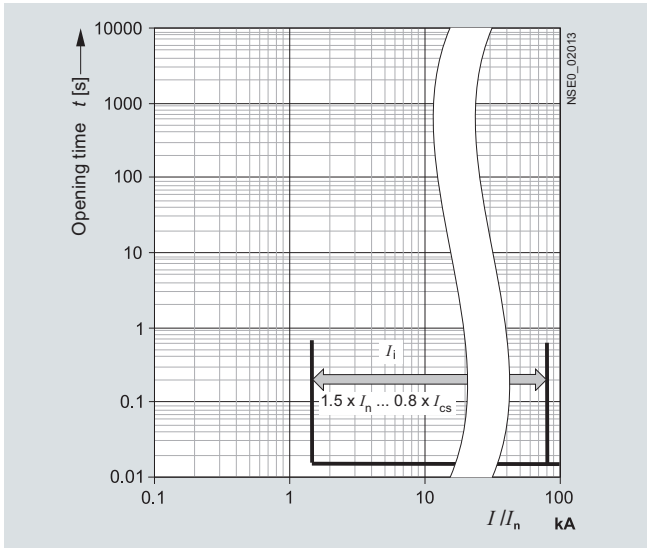
The characteristic curves shown apply to ambient temperatures at the circuit breaker between -5 and +55 °C. The trip unit can be operated at ambient temperatures of -20 to + 70 °C. An extended tolerance band can apply at these temperatures.



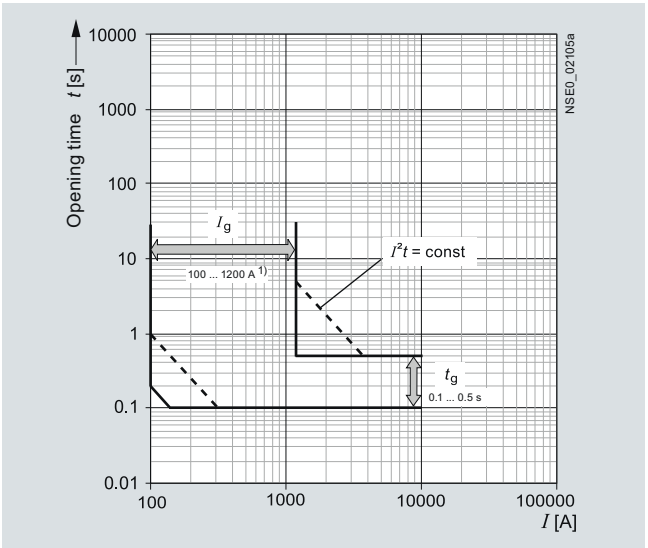
3WT8 circuit breaker with ETU45WT and ETU47WT electronic trip unit, L characteristic curve



3WT8 circuit breaker with ETU45WT and ETU47WT electronic trip unit, S characteristic curve



3WT8 circuit breaker with ETU45WT and ETU47WT electronic trip unit, I characteristic curve



3WT8 circuit breaker with ETU47WT electronic trip unit, G characteristic curve2)

Tolerances for the set currents
L: Tripping operations between 1.05 and 1.2 x I_R
S: –0 %, +20 %
I: –0 %, +20 %
G: –0 %, +20 %

Tolerances for the tripping times
L: –20 %, +0 % for I^2t characteristic curve
S: –0 %, +60 ms or -0 %, 10 % for characteristic curve with fixed delay time
I: <50 ms
G: –0 %, +60 ms or -0 %, 10 % for characteristic curve with fixed delay time

1) Sizes I and II: 100 ... 1200 A.

2) As a result of the activation level of 150 A (frame size I) and 200 A (frame size II) in case of a single-pole loading the minimum pick-up value of ground fault will be I_g = 300 A.

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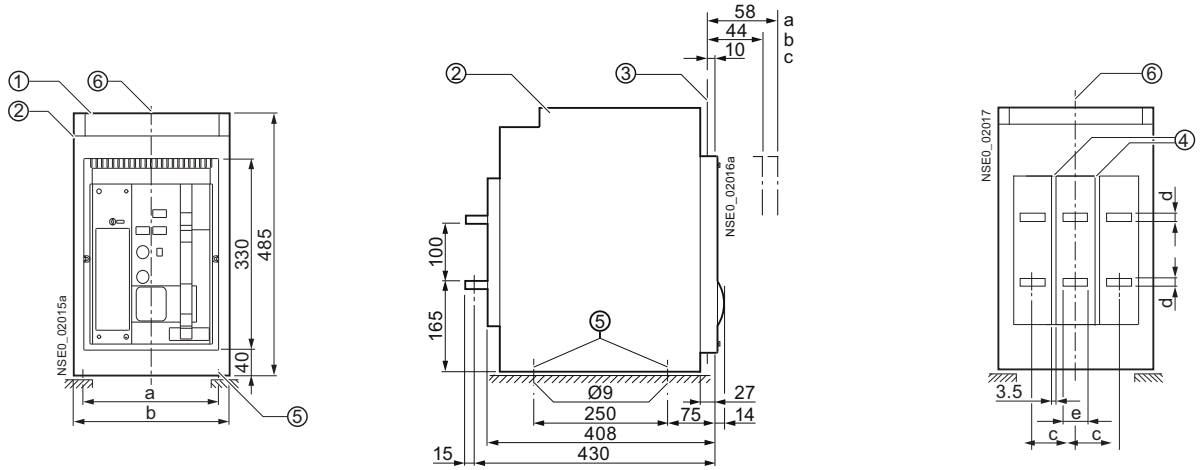
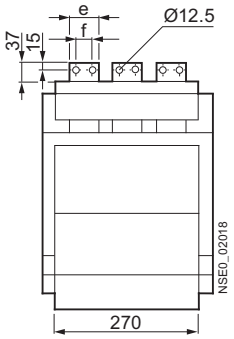
Project planning aids

Dimensional drawings

3WT circuit breakers, withdrawable version, 3-pole

Horizontal connection





a Disconnected position
b Test position
c Connected position

① Auxiliary conductor plug-in system
② Guide frame
③ Switchboard door
④ Slots (6 mm deep) for line-side interphase barriers
⑤ Holes for attaching the guide frame
⑥ Center line of circuit breaker

Safety clearances

No additional safety clearance is required to adjacent grounded parts above the circuit breaker
(on fixed-mounted circuit breakers identified with 3).

The clearance between the connection point and the support for the busbars must not exceed 250 mm.

All dimensions in mm.

Rated current A	a	b	c	d	e	f
400 up to 1250	280	320	90	8	60	30
1600	280	320	90	15	60	30
2000 up to 2500	380	420	120	15	80	40
3200	380	420	120	30	100	50

Main conductor connection

Terminal screws with strain washers (inside diameter = 12 mm to DIN 6769-Fst)		M12
Recommended tightening torque	Nm	70
Required strength of screws		8.8 to DIN 267

Up to a rated operating voltage of AC 500 V the busbars running vertically (such as in the case of front-accessible connection) do not have to be screened if the busbar system is not arranged above the circuit breaker.
In contrast, live bare conductors and busbars at voltages above AC 500 V that are arranged above the circuit breaker and when power is supplied from above must be insulated against flashover by interphase barriers or by a busbar cover or by an arc chute cover (use accessory for horizontal or vertical connection only).
Optional electrical equipment directly above (if no arc chute cover is used) or to the side of the circuit breaker should be protected by a cover. Also after the attachment of additional barriers or covers it must be ensured that the dissipation of heat from the circuit breaker is not impeded.

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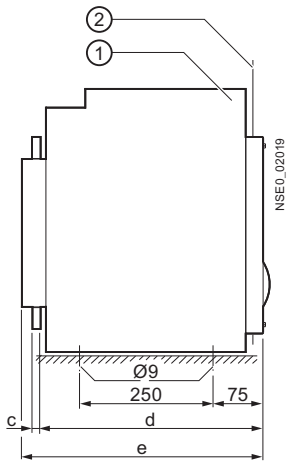
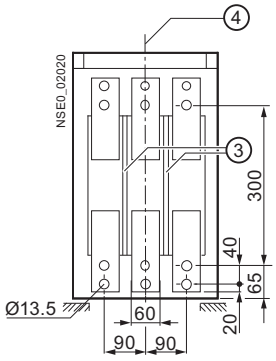
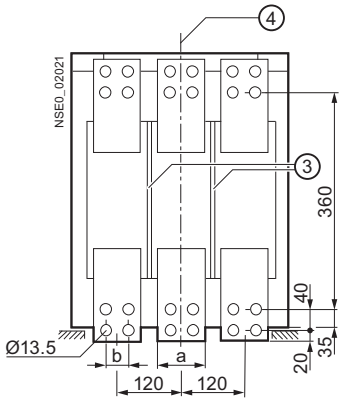
3WT circuit breakers, withdrawable version, 3-pole

Front connection





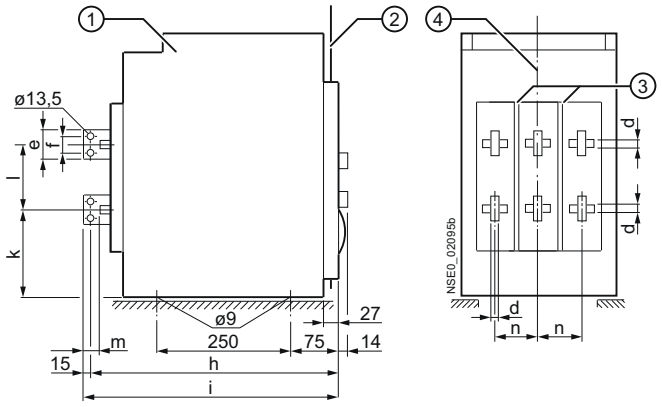
Double hole, 400 to 1600 A
Holes in bars to DIN 43673



Double hole, 2000 to 3200 A
Holes in bars to DIN 43673

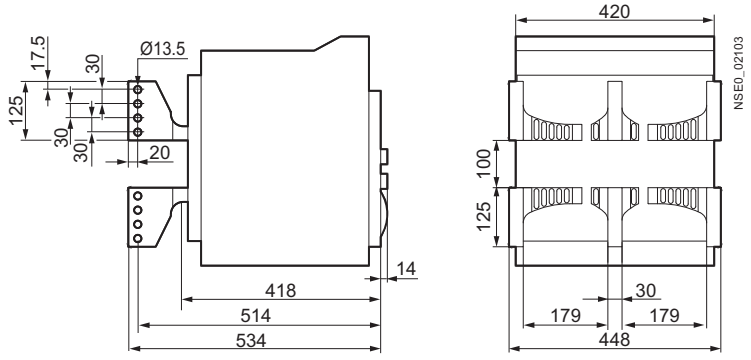
Rated current A	a	b	c	d	e
400 up to 1250	60	--	8	390	408
1600	60	--	15	390	408
2000 up to 2500	80	40	20	420	445
3200	100	50	20	420	445

Vertical connection up to 3200 A



Rated current A	d	e	f	h	i	k	l	m	n
400 up to 1250	8	60	30	455	470	157.5	115	37	90
1600	15	60	30	455	470	157.5	115	37	90
2000 to 2500	15	80	40	465	480	157.5	115	37	140
3200	30	100	50	465	480	150	130	37	140

Vertical connection 3800 A only - other mounting dimensions are equivalent to 3200 A version.



① Guide frame
② Switchboard door
③ Slots (6 mm deep, 3.5 mm wide) for line-side phase barriers
④ Center line of circuit breaker

For safety clearances see page 2/36.
All dimensions in mm.

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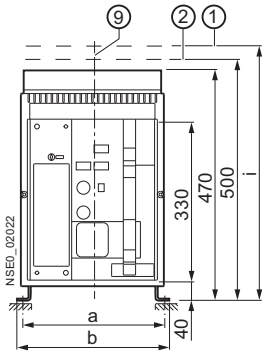
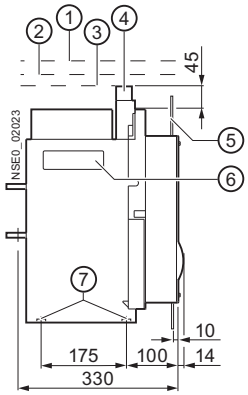
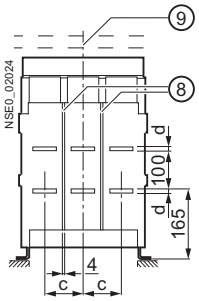
Project planning aids

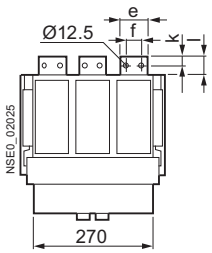
3WT fixed-mounted circuit breakers, 3-pole

Horizontal connection





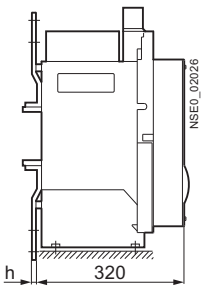




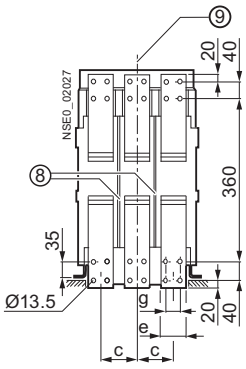
① Clearance for lifting out the arc chute
② Space for auxiliary supply connectors
③ Space above arc chute
④ Auxiliary supply connectors
⑤ Switchboard door
⑥ Recessed grip
⑦ M8 nut
⑧ Slots (4 mm deep) for line-side phase barriers
⑨ Center line of circuit breaker

For safety clearances see page 2/36.
All dimensions in mm.

Front connection



Double hole
Holes in bars to DIN 43673



Rated current A	a	b	c	d	e	f	g	h	i	k	l
400 up to 1250	300	320	90	8	60	30	--	8	530	18	40
1600	300	320	90	15	60	30	--	20	530	18	40
2000 up to 2500	400	420	120	15	80	40	40	20	560	22	44
3200	400	420	120	30	80	40	40	20	560	22	44

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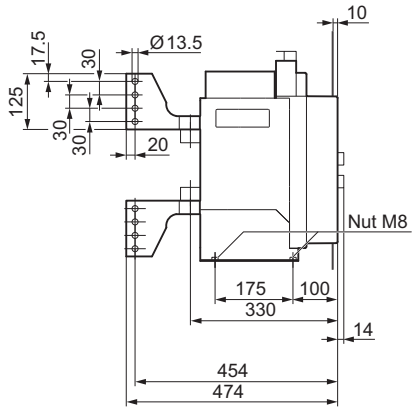
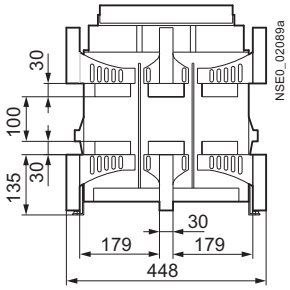
3WT fixed-mounted circuit breakers, 3-pole

Vertical connection 4000 A only





All dimensions in mm.

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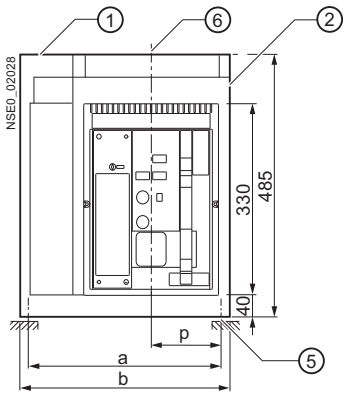
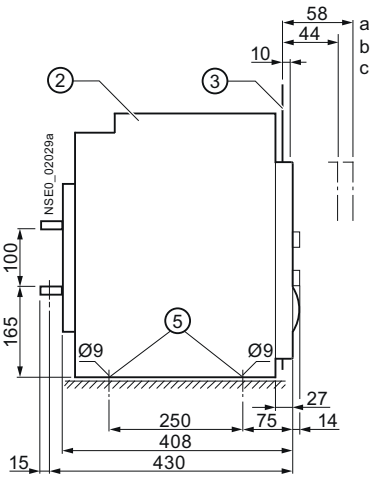
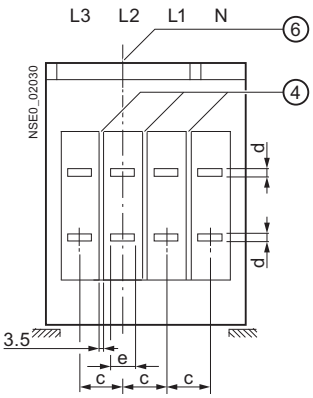
Project planning aids

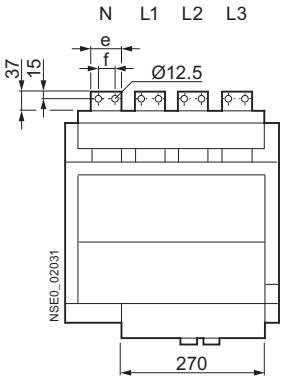
3WT circuit breakers, withdrawable version, 4-pole

Horizontal connection









a Disconnected position
b Test position
c Connected position

① Auxiliary conductor plug-in system
② Guide frame
③ Switchboard door
④ Slots (6 mm deep) for line-side phase barriers
⑤ Holes for attaching the guide frame
⑥ Center line of operator panel

For safety clearances see page 2/36.

All dimensions in mm.

Rated current A	a	b	c	d	e	f	p
400 up to 1250	370	410	90	8	60	30	140
1600	370	410	90	15	60	30	140
2000 up to 2500	500	540	120	15	80	40	190
3200	500	540	120	30	100	50	190

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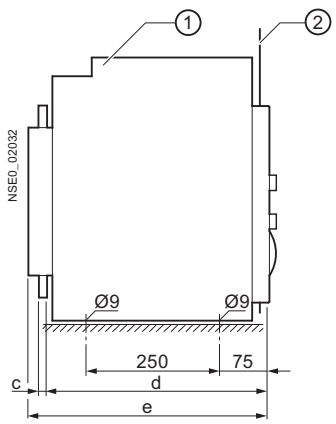
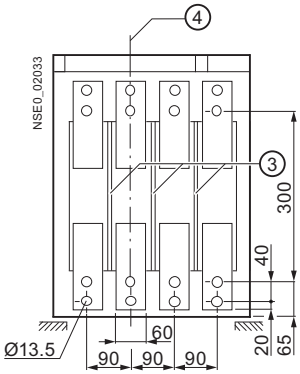
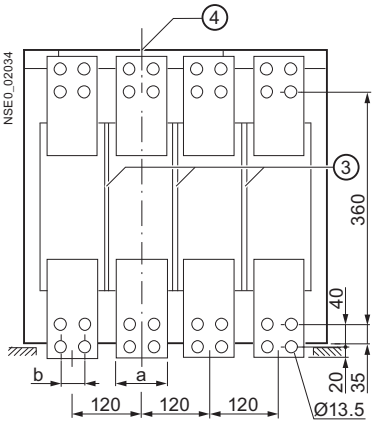
3WT circuit breakers, withdrawable version, 4-pole

Front connection





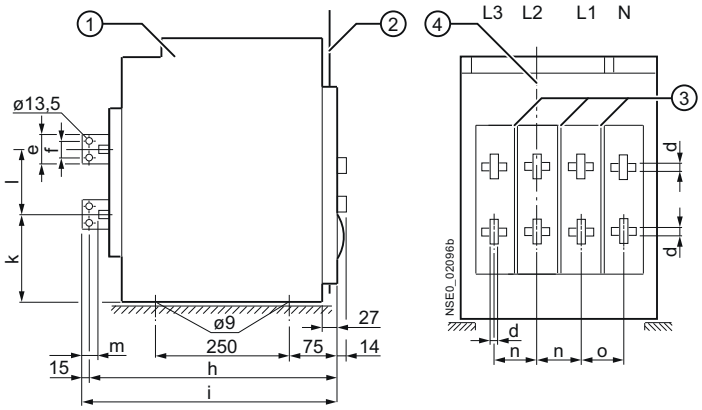
Double hole, 400 to 1600 A
Holes in bars to DIN 43673



Double hole, 2000 to 3200 A
Holes in bars to DIN 43673

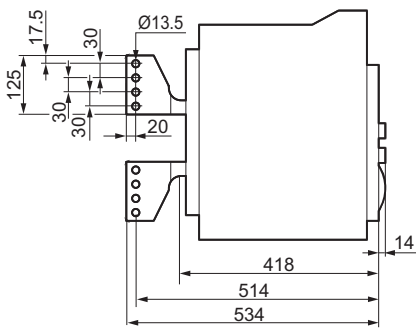
Rated current A	a	b	c	d	e
400 up to 1250	60	--	8	390	408
1600	60	--	15	390	408
2000 up to 2500	80	40	20	420	445
3200	100	50	20	420	445

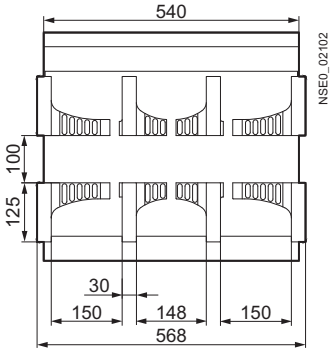
Vertical connection up to 3200 A



Rated current A	d	e	f	h	i	k	l	m	n	o
400 up to 1250	8	60	30	455	470	157.5	115	37	90	90
1600	15	60	30	455	470	157.5	115	37	90	90
2000 up to 2500	15	80	40	465	480	157.5	115	37	140	120
3200	30	100	50	465	480	150	130	37	140	120

Vertical connection 3800 A only - other mounting dimensions are equivalent to 3200 A version.





① Guide frame
② Switchboard door
③ Slots (6 mm deep, 3.5 mm wide) for line-side phase barriers
④ Center line of operator panel

For safety clearances see page 2/36.

All dimensions in mm.

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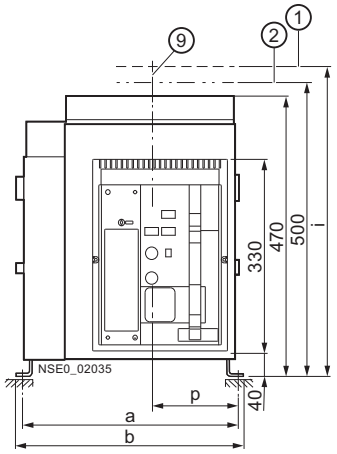
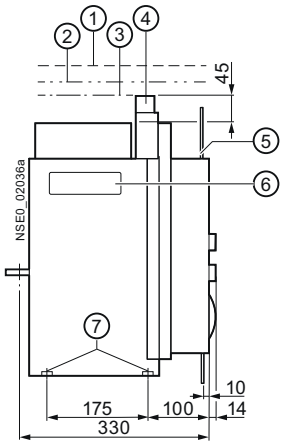
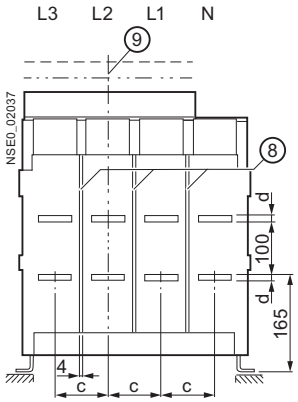
Project planning aids

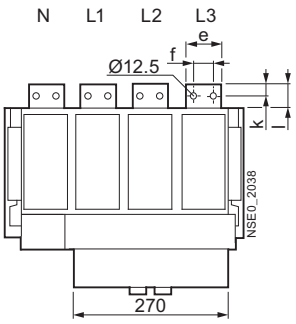
3WT fixed-mounted circuit breakers, 4-pole

Horizontal connection





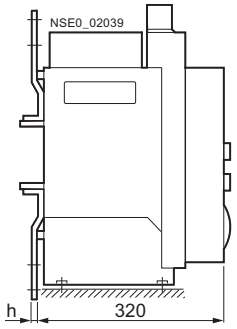




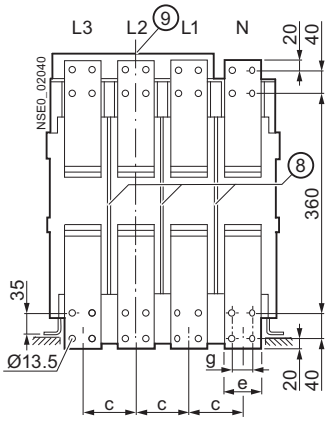
① Clearance for lifting out the arc chute
② Space for auxiliary supply connectors
③ Space above arc chute
④ Auxiliary supply connectors incl. wiring space
⑤ Switchboard door
⑥ Recessed grip
⑦ Nut M 8
⑧ Slots (4 mm deep) for line-side phase barriers
⑨ Center line of operator panel

For safety clearances see page 2/36.
All dimensions in mm.

Front connection



Double hole
Holes in bars to DIN 43673



Rated current A	a	b	c	d	e	f	g	h	i	k	l	p
400 up to 1250	390	410	90	8	60	30	--	8	530	18	40	150
1600	390	410	90	15	60	30	--	15	530	18	40	150
2000 up to 2500	520	540	120	15	80	40	40	20	560	22	44	200
3200	520	540	120	30	80	40	40	20	560	22	44	200

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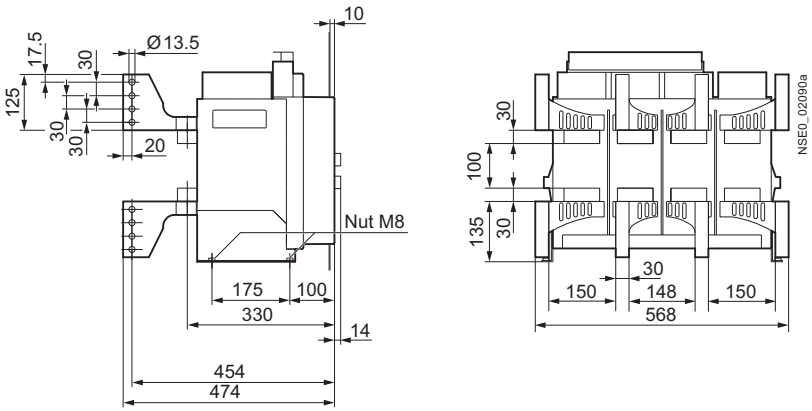
3WT fixed-mounted circuit breakers, 4-pole

Vertical connection 4000 A only



All dimensions in mm.

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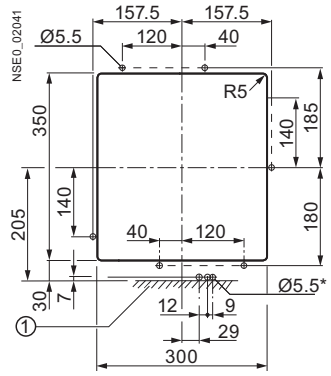
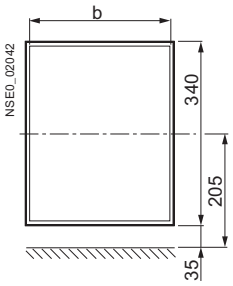
Project planning aids

3WT circuit breakers, 3- and 4-pole

Door cut-out for operator panel using the door sealing frame



Door cut-out with edge protector
Cut-out after mounting
the edge protector



Cut-out when the circuit breaker is installed in a switchgear cabinet and with the door arranged centrally.

Section width	Fixed-mounted b	Withdrawable b
400	275	292
500	275	290
600	275	288

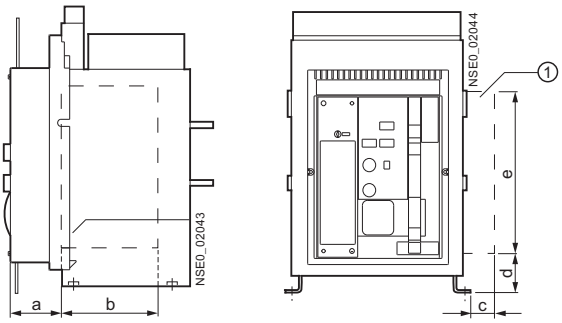
① Mounting surface

* 3 holes, dia. ∅ 5.5 mm; only drill when using door interlocking.

Accessories for 3WT circuit breakers, 3- and 4-pole

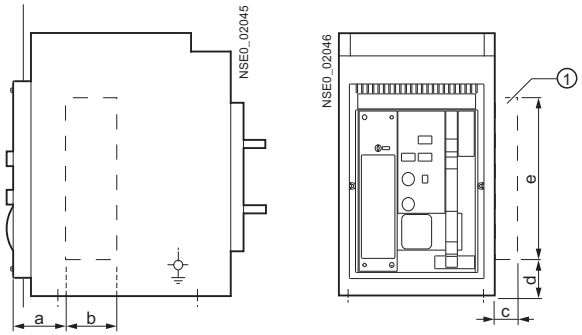
Mutual mechanical interlocking (1)/locking device to prevent closing (2), consisting of lock in the control cabinet door and interlock module with Bowden wire

For fixed-mounted circuit breakers



① Clearance for interlock module (without Bowden wire)

For withdrawable circuit breakers



Clearance for	a	b	c	d	e
(1)	90	90	50	65	270
(2)	58	215	10	250	115

All dimensions in mm.

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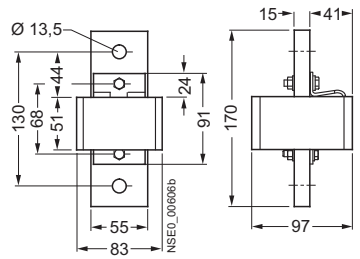
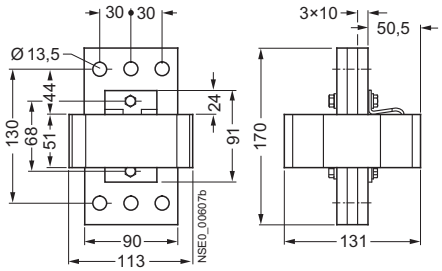
Current transformers for overload protection in the neutral conductor

External transformers for neutral conductor with copper busbars

Size I, 3WL9 111-0AA31-0AA0

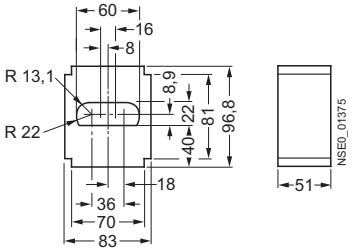


Size II, 3WL9 111-0AA32-0AA0

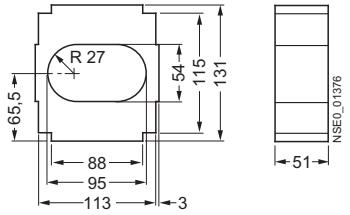


External transformers for neutral conductor without copper busbars

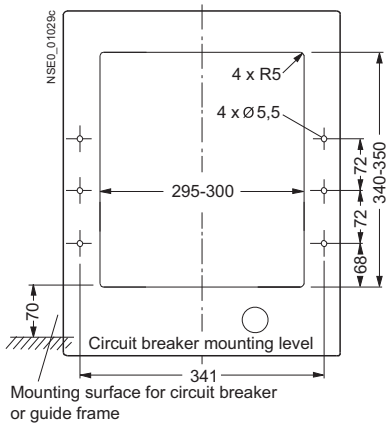
Size I, 3WL9 111-0AA21-0AA0



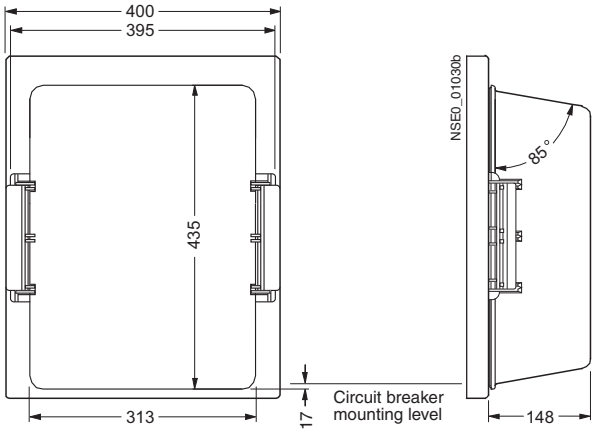
Size II, 3WL9 111-0AA22-0AA0



Door cut-out for operator panel using protective cover IP55



Protective cover, IP55



All dimensions in mm.

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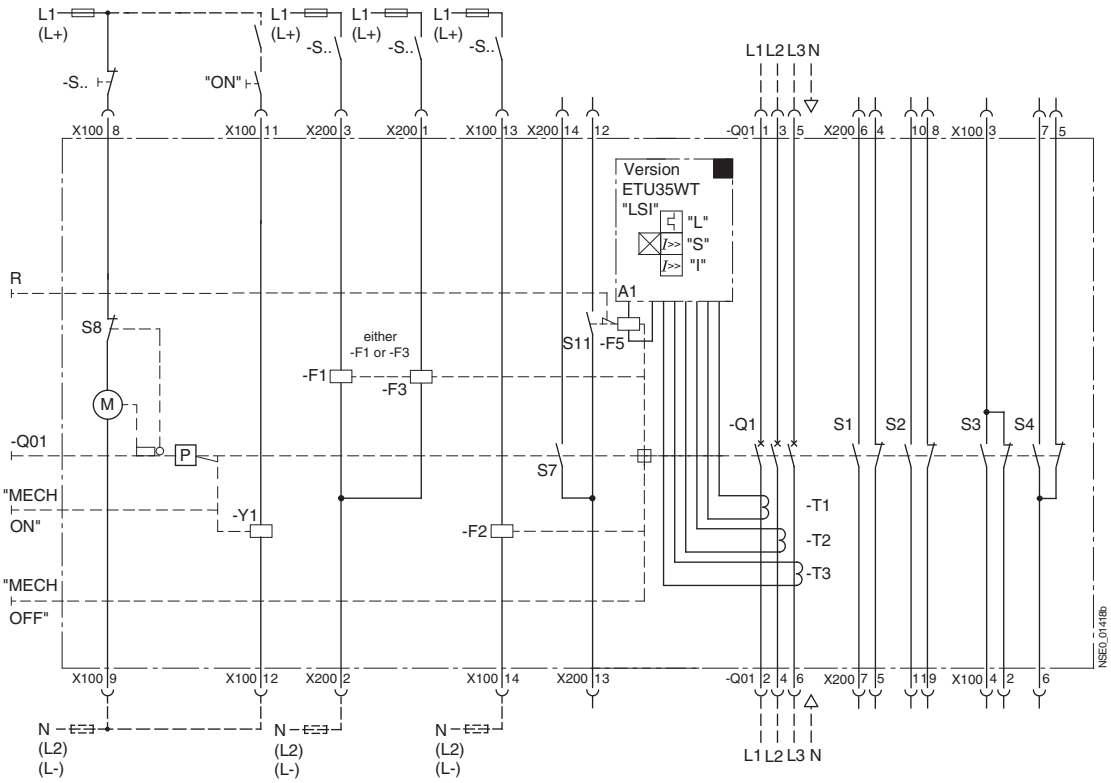
Schematics

Example of an overall circuit diagram

Motor/manual operating mechanism, with ready-to-close signaling switch, with electronic trip unit version ETU35WT "LSI", with overvoltage release "r" (F3) or shunt release "f" (F1), with shunt release "f" (F2), with "tripped" signaling switch, with auxiliary switch 2 NO + 2 NC + 2 CO, with motor switch



A1	Electronic trip unit
S1/S2	1st auxiliary switch block
S3/S4	2nd auxiliary switch block
S7	Ready-to-close signaling switch
S8	Storage spring contact
S11	"Tripped" switch
F1	1st shunt release "f"
F2	2nd shunt release "f"
F3	Undervoltage release "r"
F5	Trip solenoid
M1	Motor for "charging store"
P	Storage spring
Q01	Hand-operated lever for "charging store"
Q1	Main contacts
T1/T2/T3	Current transformer
X100/X200	Terminals
Y1	Closing solenoid
R	Indication and reset button for overcurrent tripping

Further information

For planning guides with further descriptions relating to design, operating principle, installation and retrofitting see manual "3WT Air Circuit Breakers" at www.siemens.com/lowvoltage/support.

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Appendix

3

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3/3 Catalog notes

3/4 Ordering notes

3/5 Further documentation

3/6 Standards and approvals

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3/12 Comprehensive support from A to Z

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3/18 Terms and conditions of sale and delivery

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Glossary

Rated operating voltage, (U_e)
EN 60947-1; 4.3.1.1

Voltage fixed by the manufacturer. Several pertinent tests relate to its determination, as may also the utilization category. Along with the rated (operating) current, it determines the device's utilization. The highest value of rated operating voltage may in no case be greater than the value of the rate insulation voltage U_i.

Rated insulation voltage, (U_i)
EN 60947-1; 4.3.1.2

Voltage measure to which are related tests of dielectric strength and creepage distance.

Rated current, (I_n)
EN 60947-2; 4.3.2.3

Current value of particular circuit breaker that can be handled uninterruptedly. The highest current valued tripping the circuit breaker in conformity with a specifically stated tripping characteristic.

Reduced rated current, (I_r)

Specifically established, reduced value of I_n current for a regulated time-dependent (thermal) release and that the circuit breaker can handle continuously. Maximum setting is at value equal to I_n. Changing I_r shifts the release's tripping characteristic along the current axis. ($I_r = k \times I_n$ holds where $k \leq 1$)

Tripping time at a given I_r multiple, (t_r)

Time after which circuit breaker will trip, if a current flows through it that is equal to the given multiple of I_r. Changing t_r shifts the tripping characteristic along the time axis.

Actuating current of (selective) release's time-independent delay, (I_{ds})

Minimum current value causing the release's time-independent delay to actuate.

Delay of time-independent delayed release, (t_v)

If a current flows through the circuit breaker equal to at least I_{sd} but not reaching I_{rm} the circuit breaker will trip with time delay t_v. Total shut-off time is influenced by the tripping of the circuit breaker itself and is about 10 ÷ 20 ms longer.

Actuating current of time-independent instantaneous, (I_{rm})

Minimum current value causing the time-independent instantaneous release to actuate.

Rated operating current, (I_e)
EN 60947-1; 4.3.2.3

Rated operating current of device (switch-disconnector) is fixed by the manufacturer with consideration for the rated operating voltage, rated frequency, rated operation, utilization category and type of protective cover, if that comes into consideration.

Rated normal current, (I_u)
EN 60947-1; 4.3.2.4

Current value set by the manufacturer and which the device can handle in continuous operation, i.e. during a period longer than 8 hours (weeks, months, or longer).

Rated ultimate short-circuit breaking capacity, (I_{cu})
EN 60947-2; 2.15.1; 4.3.5.2.1

Ultimate short-circuit breaking capacity value expressed as the rms value of the alternating component of the assumed short-circuit current that the circuit breaker must be able to manage in the mode: 1x switching off of the short circuit and a following 1x make-break sequence. After testing, the circuit breaker need not be able to conduct the rated current uninterruptedly. I_{cu} is set for the rated operating voltage at the rated frequency and at the established power factor for alternating current or at the time constant for direct current. Must fulfil the condition: $I_{cu} \geq I_k''$

Rated short-circuit service breaking capacity, (I_{cs})
EN 60947-2; 2.15.2; 4.3.5.2.2

Value of the operating short-circuit breaking capacity expressed as the rms value of the alternating component of the assumed short-circuit current that the circuit breaker must be able to manage in the mode: 1x switching off of the short circuit and a following 2x make-break sequence. May also be expressed as a percentage of I_{cu}. After testing, the circuit breaker must be able uninterruptedly to conduct the rated current and to switch off the overcurrent. Temperature increase of the main terminals may be greater. I_{cs} is set for the rated operating voltage at the rated frequency and at the established power factor for alternating current or at the time constant for direct current. Permitted: $I_{cs} \geq I_k''$

Rated short-time withstand current, (I_{cw})
EN 60947-1; 4.3.6.1
EN 60947-2; 4.3.5.4
EN 60947-3; 4.3.6.1

Value of short-time withstand current specified by the manufacturer that the device is able to handle without damage during a designated time period (short-time delay). In case of alternating current, it is the rms value of the alternating component of the assumed short-circuit current I_p.

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Overview

Trademarks

All product designations may be registered trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes may violate the rights of the owner.

Amendments

All technical data, dimensions and weights are subject to change without notice unless otherwise specified on the pages of this catalog.

Dimensions

All dimensions are in mm.

Images

The illustrations are not binding.

Technical data

The technical data in the catalog are for general information. The instruction manuals and the operating instructions on the products must be observed during assembly, operation and maintenance.

Further technical information is available at
www.siemens.com/lowvoltage/support

- under Product List:
  - Technical specifications
- under Entry List:
  - Updates
  - Download
  - FAQ
  - Manuals
  - Characteristic curves
  - Certificates

Configurators can be found under
www.siemens.com/lowvoltage/configurators

Assembly, operation and maintenance

The instruction manuals and the operating instructions on the products must be observed during assembly, operation and maintenance.

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Ordering notes

Logistics

General

With regard to delivery service, communications and environmental protection, our logistics service ensures "quality from the moment of ordering right through to delivery". By designing our infrastructure according to customer requirements and implementing electronic order processing, we have successfully optimized our logistics processes.

We regard the DIN ISO 9001 certification and consistent quality checks as an integral part of our services.

Electronic order processing is fast, cost-efficient and error-free. Please contact us if you want to benefit from these advantages.

Packaging, packing units

The packaging in which our equipment is dispatched provides protection against dust and mechanical damage during transport, thus ensuring that all our products arrive in perfect condition.

We select our packaging for maximum environmental compatibility and reusability and, in particular, with a view to reducing waste.

With our multi-unit packaging and reusable packaging, we offer you specific types of packaging that are both kind to the environment and tailored to your requirements:

Your advantages at a glance:

- Lower order costs.
- Cost savings through uniform-type packaging: low/no disposal costs.
- Reduced time and cost thanks to short unpacking times.
- "Just-in-time" delivery directly to the production line helps reduce stock: cost savings through reduction of storage area.
- Fast assembly thanks to supply in sets.
- Active contribution to environmental protection.

Unless stated otherwise in the "Selection and ordering data" of this catalog, our products are supplied individually packed.

> For small parts/accessories, we offer you economical packaging units as standard packs containing more than one item, e.g. 5, 10, 50 or 100 units. It is essential that whole number multiples of these quantities be ordered to ensure satisfactory quality of the products and problem-free order processing.

The products are delivered in a neutral carton. The label includes warning notices, the CE mark, the open arrow recycling symbol, and product description information in English and German. In addition to the Order No. (MLFB) and the number of items in the packaging, the Instr. Order No. is also specified for the operating instructions. It can be obtained from your local Siemens representative (you will find a list of your local Siemens representatives at www.siemens.com/automation/partner).

The device Order No. of most devices can also be acquired through the EAN barcode to simplify ordering and storage logistics.

The Order Nos. and EAN codes are assigned electronically in the master data of the products for low-voltage power distribution and electrical installation.

Ordering very small quantities

When small orders are placed, the costs associated with order processing are greater than the order value. We therefore recommend that you combine several small orders. Where this is not possible, we regret that we are obliged to make a small processing charge: for orders with a net goods value of less than € 250 we charge an € 20 supplement to cover our order processing and invoicing costs.

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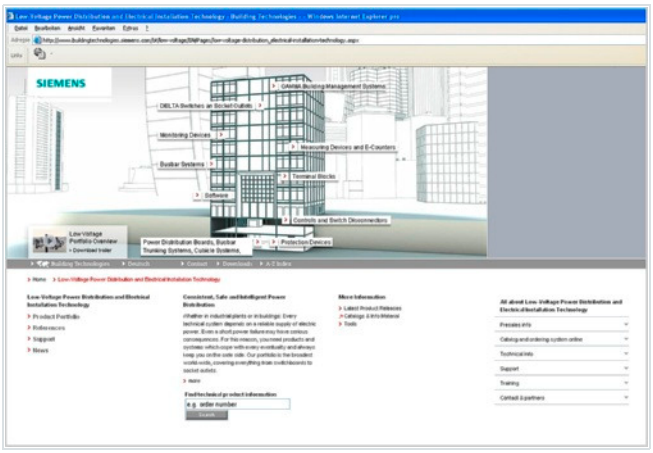
Overview



We regard product support as just as important as the products and systems themselves.

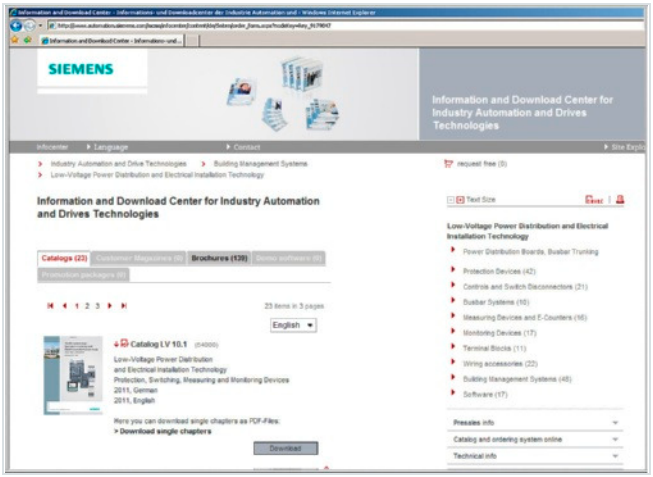
Visit our site on the Internet for a comprehensive offering of support for low-voltage power distribution and electrical installation products, such as

- Operating instructions and manuals for direct download
- Online registration for seminars and events
- Up-to-date answers to your queries and problems
- Software upgrades and updates for fast download
- Telephone assistance in more than 190 countries
- Photos and graphics for external use

and much, much more - all conveniently and easily accessible.

Address:

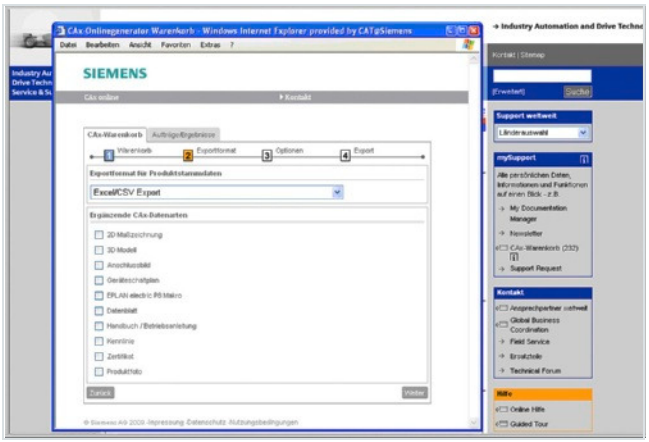
www.siemens.com/lowvoltage



You will find regularly updated information material such as catalogs, customer magazines, brochures and trial versions of software for low-voltage power distribution and electrical installation on the Internet at:

www.siemens.com/lowvoltage/infomaterial

Here you can order your copy of the available documentation or download it in common file formats (PDF, ZIP).



For your configuration systems we can provide technical and graphic data in electronic form for the range of low-voltage power distribution and electrical installation products:

CAx online generator

For the further processing of low-voltage power distribution and electrical installation products in CAE/CAD systems the online generator provides:

- Technical product master data in CSV and Excel format
- Graphic product data
  - 2D dimensional drawings in DXF format (other formats optional)
  - 3D models in STEP format
  - Internal circuit diagrams
  - EPLAN electric P 8 macros
- Documentation in the form of PDF files
  - Product data sheets
  - Manuals
  - Operating instructions
  - Characteristics
  - Certificates
- Product photos
- Texts for tenders in GAEB and Text format

www.siemens.com/cax

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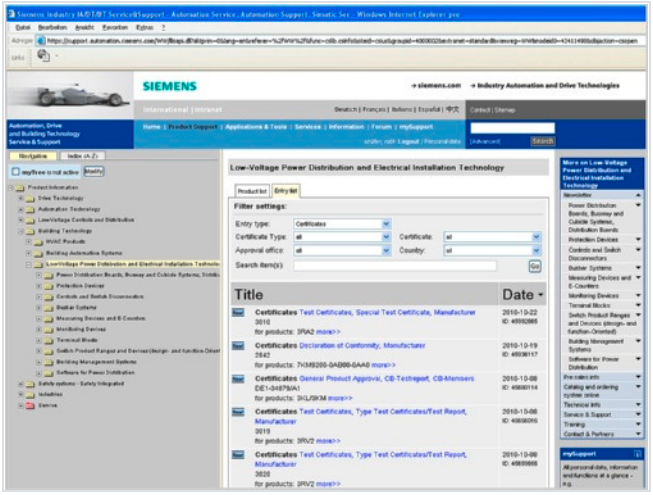
Standards and approvals

Overview

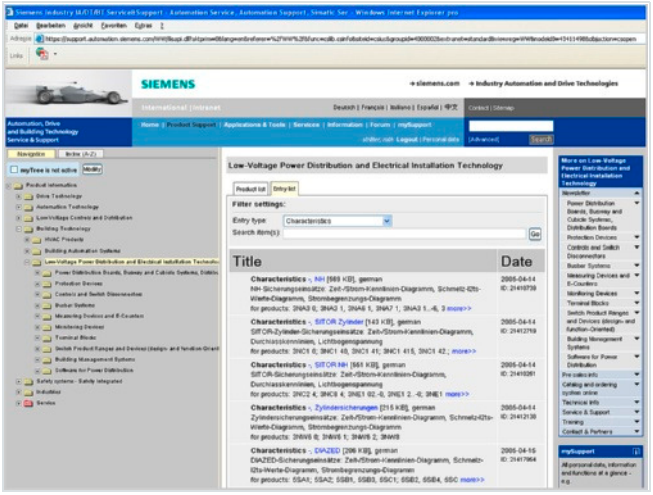
Approvals, test certificates, characteristic curves

An overview of the certificates available for low-voltage power distribution and electrical installation products along with more technical documentation can be consulted daily on the Internet at:

www.siemens.com/lowvoltage/support



Product support: Approvals / Certificates



Product support: Characteristic curves

Product standards (excerpt)

IEC	EN	DIN VDE	Title
60947-1	60947-1	--	Low-voltage controlgear and switchgear: General rules
60947-2	60947-2	--	• Circuit breakers
60947-3	60947-3	--	• Switches, disconnectors, switch disconnectors and fuse-combination units
60947-4-1	60947-4-1	--	• Contactors and motor starters – Electromechanical contactors and motor starters
60947-4-2	60947-4-2	--	• Contactors and motor starters – Semiconductor motor controllers and starters, soft starters
60947-4-3	60947-4-3	--	• Contactors and motor starters – AC semiconductor controllers and contactors for non-motor loads
60947-5-1	60947-5-1	--	• Control circuit devices and switching elements – Electromechanical control circuit devices
60947-5-2	60947-5-2	--	• Control circuit devices and switching elements – Proximity switches
60947-5-3	60947-5-3	--	• Control circuit devices and switching elements – Requirements for proximity devices with defined behaviour under fault conditions
60947-5-5	60947-5-5	--	• Control circuit devices and switching elements – Electrical emergency stop device with mechanical latching function
60947-5-6	60947-5-6	--	• Control circuit devices and switching elements – DC interface for proximity sensors and switching amplifiers (NAMUR)
60947-5-7	60947-5-7	--	• Control circuit devices and switching elements – Requirements for proximity switches with analog output
60947-5-8	60947-5-8	--	• Control circuit devices and switching elements – Three-position enabling switches
60947-5-9	60947-5-9	--	• Control circuit devices and switching elements – Flow rate switches
60947-6-1	60947-6-1	--	• Multiple function equipment – Transfer switching equipment
60947-6-2	60947-6-2	--	• Multiple function equipment – Control and protective switching devices (or equipment) (CPS)
60947-7-1	60947-7-1	--	• Ancillary equipment – Terminal blocks for copper conductors
60947-7-2	60947-7-2	--	• Ancillary equipment – Protective conductor terminal blocks for copper conductors
60947-7-3	60947-7-3	--	• Ancillary equipment – Safety requirements for fuse terminal blocks
60947-8	60947-8	--	• Control units for built-in thermal protection (PTC) for rotating electrical machines
62026-2	50295	--	• Controller and device interface systems. Actuator-Sensor Interface (AS-i)
60269-1	60269-1	--	Low-voltage fuses – General requirements
60269-4	60269-4	--	Low-voltage fuses – Supplementary requirements for fuse-links for the protection of semiconductor devices
60050-441	--	--	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses
60439-1	60439-1	--	Low-voltage switchgear and controlgear assemblies – Type-tested and partially type-tested assemblies
61439-1	--	--	Low-voltage switchgear and controlgear assemblies – General rules
61439-2	--	--	Low-voltage switchgear and controlgear assemblies – Particular requirements for busbar trunking systems (busways)
--	50274	--	Low-voltage switchgear and controlgear assemblies – Protection against electric shock - Protection against unintentional direct contact with hazardous live parts
61140	61140	--	Protection against electric shock - Common aspects for installation and equipment
60664-1	60664-1	--	Insulation coordination for electrical equipment within low-voltage systems – Principles, requirements and tests

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IEC	EN	DIN VDE	Title
60204-1	60204-1	--	Safety of machinery – Electrical equipment of machines – General requirements
--	50178	--	Electronic equipment for use in power installations
60079-14	60079-14	--	Explosive atmospheres – Part 14: Electrical installations design, selection and erection
			Installing electrical apparatus in potentially explosive gas atmospheres (except mining)
60079-2	60079-2	--	Explosive atmospheres – Part 2: Equipment protection by pressurized enclosures "p"
61810-1	61810-1	--	Electromechanical elementary relays – Part 1: General requirements
61812-1	61812-1	--	Specified time relays for industrial use – Part 1: Requirements and tests
60999-1	60999-1	--	Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 to 35 mm^2
61558-1	61558-1	0570-1[1)]	Safety of power transformers, power supplies, reactors and similar products – - Part 1: General requirements and tests
61558-2-1	61558-2-1	0570-2-1[1)]	- Part 2-1: Particular requirements and tests for separating transformers and power supplies incorporating separating transformers for general applications
61558-2-2	61558-2-2	0570-2-2[1)]	- Part 2-2: Particular requirements and tests for control transformers and power supplies incorporating control transformers
61558-2-4	61558-2-4	0570-2-4[1)]	- Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers
61558-2-6	61558-2-6	0570-2-6[1)]	- Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers
61558-2-9	61558-2-9	0570-2-9[1)]	- Part 2-9: Particular requirements and tests for transformers and power supply units for class III handlamps for tungsten filament lamps
61558-2-12	61558-2-12	0570-2-12[1)]	- Part 2-12: Particular requirements for constant voltage transformers
61558-2-13	61558-2-13	0570-2-13[1)]	- Part 2-13: Particular requirements and tests for auto transformers and power supply units incorporating auto transformers
61558-2-15	61558-2-15	0570-2-15[1)]	- Part 2-15: Particular requirements for isolating transformers for the supply of medical locations
61558-2-20	61558-2-20	0570-2-20[1)]	- Part 2-20: Particular requirements and tests for small reactors
62041	62041	0570-10[1)]	Power transformers, power supply units, reactors and similar products – EMC requirements
60076-11	60076-11	--	Power transformers – Part 11: Dry-type transformers
--	--	0552	Standards for variable-ratio transformers with moving contacts perpendicular to the coiling direction
61000-4-1	61000-4-1	--	Electromagnetic compatibility (EMC) – Part 4-1: Testing and measurement techniques – Overview of IEC 61000-4 series
61000-6-3	61000-6-3	--	Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments
61000-6-4	61000-6-4	--	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments
60044-1	60044-1	--	Instrument transformers – Part 1: Current transformers

[1)] VDE classification.

UL	CSA C22.2	ASME	JIS	Title
506	--	--	--	Specialty transformers
508	--	--	--	Industrial control equipment
489	--	--	--	Molded case circuit breakers, molded case switches and circuit breaker enclosures
1012	--	--	--	Power units other than CLASS 2
1561	--	--	--	Dry-type general purpose and power transformers
5085	--	--	--	Low-voltage transformers
60601-1	--	--	--	Medical electrical equipment, Part 1: General requirements for safety (IEC 60601, EN 60601, VDE 0750-1)
1604	--	--	--	Electrical equipment for use in CLASS I and II, Division 2 and CLASS III hazardous (Classified) locations
1059	--	--	--	Terminal blocks
486A-486B	--	--	--	Wire connectors
486E	--	--	--	Equipment wiring terminals for use with aluminum and/or copper conductors
50	--	--	--	Enclosures for electrical equipment. Non-environmental considerations
--	No. 66	--	--	Specialty transformers
--	No. 14	--	--	Industrial control equipment
--	No. 5	--	--	Molded case circuit breakers, molded case switches and circuit breaker enclosures
--	No. 107-1	--	--	General use power supplies
--	--	A17.5 / B 44.1	--	Elevator and escalator electrical equipment
--	--	--	C 8201-4-1	Low-voltage switchgear and controlgear; Contactors and motor-starters

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Standards and approvals

Quality management

The quality management system of our I BT LV Business Unit complies with the international standard EN ISO 9001.

The products and systems listed in this catalog are marketed using a VDE-approved quality management system according to ISO 9001.

VDE certificate

Siemens AG
Industry Sector
Building Technologies Division

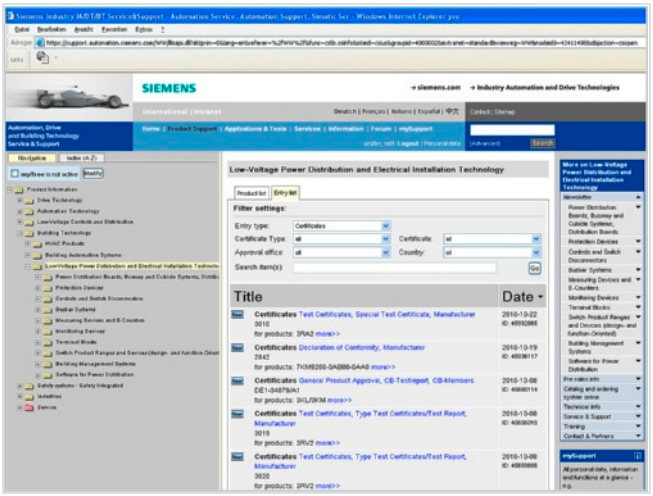
Low Voltage Distribution (I BT LV)
Reg. No.: 40017/QM/03.06

Certificates

Information on the certificates available (CE, UL, CSA, FM, shipping authorizations) for low-voltage power distribution and electrical installation products can be found on the Internet at:

www.siemens.com/lowvoltage/support

In the Entry List you can use the certificate type (general product approval, explosion protection, test certificates, shipbuilding,...) as a filter criterion.



Approval requirements valid in different countries

Siemens low-voltage switchgear and controlgear are designed, manufactured and tested according to the relevant German standards (DIN and VDE), IEC publications and European standards (EN) as well as CSA and UL standards. The standards assigned to the single devices are stated in the relevant parts of this catalog.

As far as is economically viable, the requirements of the various regulations valid in other countries are also taken into account in the design of the equipment.

In some countries (see table below), an approval is required for certain low-voltage switchgear and controlgear components. Depending on the market requirements, these components have been submitted for approval to the authorized testing institutes.

In some cases, CSA for Canada and UL for the USA only approve special switchgear versions. Such special versions are listed separately from the standard versions in the individual parts of this catalog.

For this equipment, partial limitations of the maximum permissible voltages, currents and ratings can be imposed, or special approval and, in some cases, special identification is required.

For use on board ship, the specifications of the marine classification societies must be observed (see table below). In some cases, they require type tests of the components to be approved.

Testing bodies, approval identification and approval requirements

Country	Canada [1]	USA [1]	China
Government-appointed or private, officially recognized testing bodies	CSA UL (USA)	UL	CQC
Approval symbol	c UL c FM c FM US c UL US	UL FM c FM US c UL US	CCC
Approval requirements	+	+	+
Remarks	UL and CSA are authorized to grant approvals according to Canadian or US regulations. Please note: these approvals are frequently not recognized and additional approval often has to be obtained from the national testing authority.		CCC

For more information about UL and CSA on request.

[1] For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/lowvoltage/support

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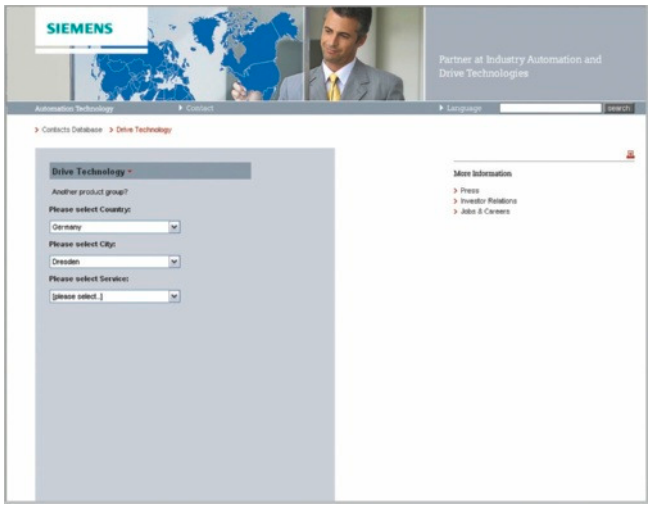
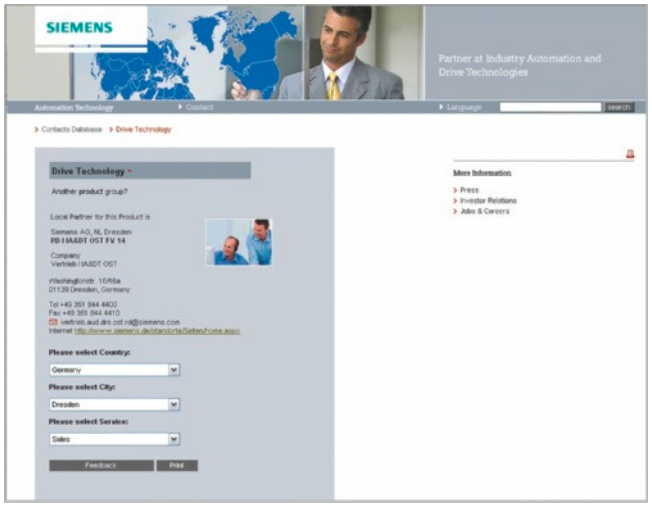
Contact partner at Siemens Industry





At Siemens Industry, more than 85 000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry range.

Your personal contact can be found in our Contacts Database at: www.siemens.com/automation/partner

You start by selecting a

- Product group,
- Country,
- City,
- Service.

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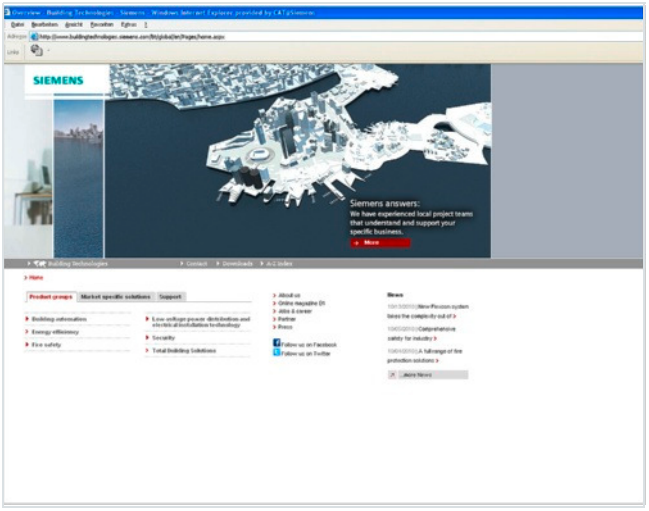
Information and ordering options available on the Internet and DVD

Siemens Building Technologies on the web



The Siemens Division Building Technologies offers the full range of products and solutions for secure and energy-efficient buildings and infrastructures – from building automation and heating, ventilation and air-conditioning systems (HLK) to fire protection, security, low-voltage power distribution and electrical installation technology.

Extensive information about all products, systems and services and support services is available in a compact and clear format on the Internet at:
www.siemens.com/buildingtechnologies

Product selection with the interactive catalog CA 01

Detailed information together with convenient interactive functions:

The interactive catalog CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives.

All information is linked into a user interface which is easy to work with and intuitive.

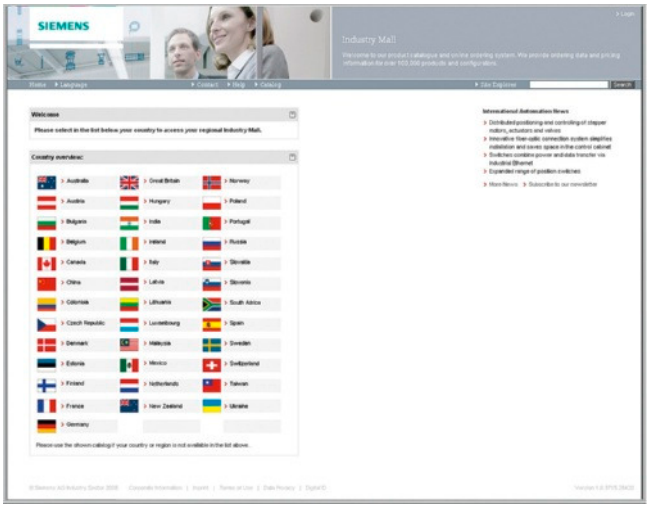
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found in the Internet under:

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall



The Industry Mall is the virtual department store of Siemens AG on the Internet. Here you have access to a huge range of products clearly and informatively presented in electronic catalogs.

Data transfer via EDIFACT allows the whole procedure, from selection over ordering through to order tracking, to be carried out online over the Internet.

A range of functions offer comprehensive support.

These include powerful search functions that make it easy to find the required products, which can then be immediately checked for availability. Customer-specific discounting and compilation of tenders are possible online, as is checking the status of your order (Tracking & Tracing).

You can find the Industry Mall on the Internet at:

www.siemens.com/industrymall

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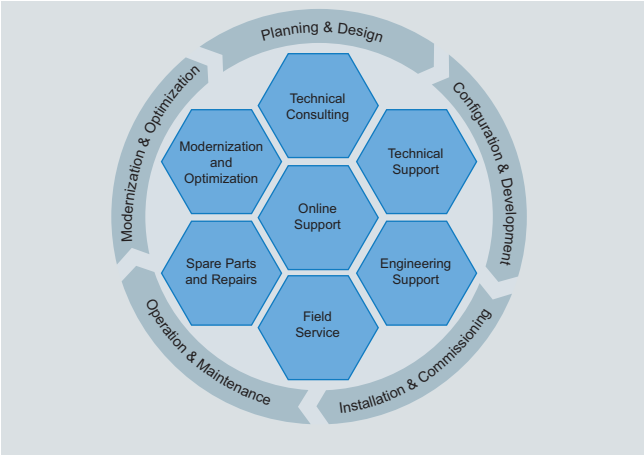
Service covering the entire life cycle

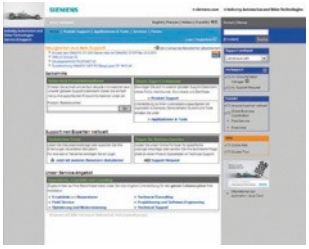
Overview



Our Service & Support are available worldwide to help you with every aspect of Siemens automation and drive technology. We offer on-site support for every phase of the life cycle of your machines and plants in more than 100 countries. Round the clock.

Every step of the way, you have access to an experienced team of specialists and their combined expertise. Thanks to regular training and the close cooperation of key employees around the globe, we are able to offer reliable services for a huge range of options.

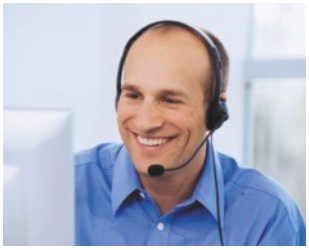
Online Support



The comprehensive information system available round the clock via Internet ranging from Product Support and Service & Support services to Support Tools in the Shop.

www.siemens.com/lowvoltage/support

Technical Support



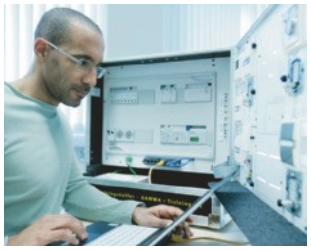
Competent consulting in technical questions covering a wide range of customer-oriented services for all our products and systems.

www.siemens.com/lowvoltage/technical-support

Technical Consulting

Support in the planning and designing of your project from detailed actual-state analysis, target definition and consulting on product and system questions right to the creation of the automation solution.

Engineering Support



Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project.

Field Service

With Field Service, we offer services for startup and maintenance essential for ensuring system availability.

Spare Parts and Repairs

In the operating phase of a machine or automation system, we offer comprehensive repair and spare parts services ensuring the highest degree of plant availability.

Modernization and Optimization

After startup or during the operating phase, additional potential for inceasing the productiviy or for reducing costs often arises. For this purpose, we offer you high-quality services in optimization and upgrading.

Contact information is available in the Internet at:
www.siemens.com/automation/partner

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Comprehensive support from A to Z

Overview

In all issues for more efficiency - comprehensive support and access at any time to tried and tested tools, quickly and easily via the Internet.

Product information	
Website	Fast and targeted information about low-voltage power distribution: www.siemens.com/lowvoltage
Newsletter	Always up to date about our forward-looking products and systems: www.siemens.com/lowvoltage/newsletter
Product information/product & system selection	
Information and download center	Current catalogs, customer magazines, brochures, demo software and promotion packages: www.siemens.com/lowvoltage/infomaterial
Industry Mall	Comprehensive information and order platform for the Siemens Industry Basket: www.siemens.com/industrymall
Product- & System-Engineering	
SIMARIS Software tools	Support in planning and configuration the electrical power distribution: www.siemens.com/simaris
Engineering software ALPHA SELECT	Simple and fast configuration for distribution boards and meter cabinets with products from the Siemens Industry Basket: www.siemens.com/alpha-select
Product documentation	
Service & support portal	Comprehensive technical information - from planning to configuration and operation: www.siemens.com/lowvoltage/support
CAx Data	Collation of commercial and technical master product data: www.siemens.com/cax
Image database	Collection of product photographs and graphics, such as dimensional drawings and internal circuit diagrams: www.siemens.com/lowvoltage/bilddb
Product training	
SITRAIN Portal	Comprehensive training program about our products, systems and engineering tools: www.siemens.com/lowvoltage/training
Product hotline	
Technical support	Support in all technical queries about our products: E-mail: support.automation.siemens.com www.siemens.com/lowvoltage/technical-support

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Overview

Software types

Software requiring a license is categorized into types.
The following software types have been defined:

- Engineering software
- Runtime software

Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of delivery can be found in the readme file supplied with the relevant product(s).

License types

Siemens Industry Automation & Drive Technologies offers various types of software license:

- Floating license
- Single license
- Rental license
- Trial license

Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started.
A license is required for each concurrent user.

Single license

Unlike the floating license, a single license permits only one installation of the software.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per device, per axis, per channel, etc.

One single license is required for each type of use defined.

Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific number of hours (the operating hours do not have to be consecutive).
One license is required for each installation of the software.

Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes.
It can be transferred to another license.

Factory license

With the Factory License the user has the right to install and use the software at one permanent establishment only. The permanent establishment is defined by one address only.The number of hardware devices on which the software may be installed results from the order data or the Certificate of License (CoL).

Certificate of license

The Certificate of License (CoL) is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

Delivery versions

Software is constantly being updated.
The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.
A separate PowerPack must be purchased for each original license of the software to be replaced.

Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.
The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.
A separate upgrade must be purchased for each original license of the software to be upgraded.

ServicePack

ServicePacks are used to debug existing products.
ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

License key

Siemens Industry Automation & Drive Technologies supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

Detailed explanations concerning license conditions can be found in the “Terms and Conditions of Siemens AG” or under
http://www.siemens.com/industrymall
(Industry Mall Online-Help System)

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Subject to change without prior notice
Order No. E86060-K1835-A101-A3-7600
3P.8303.54.01 / Dispo 18301
KG 0811 15. S 72 En
Printed in Germany
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